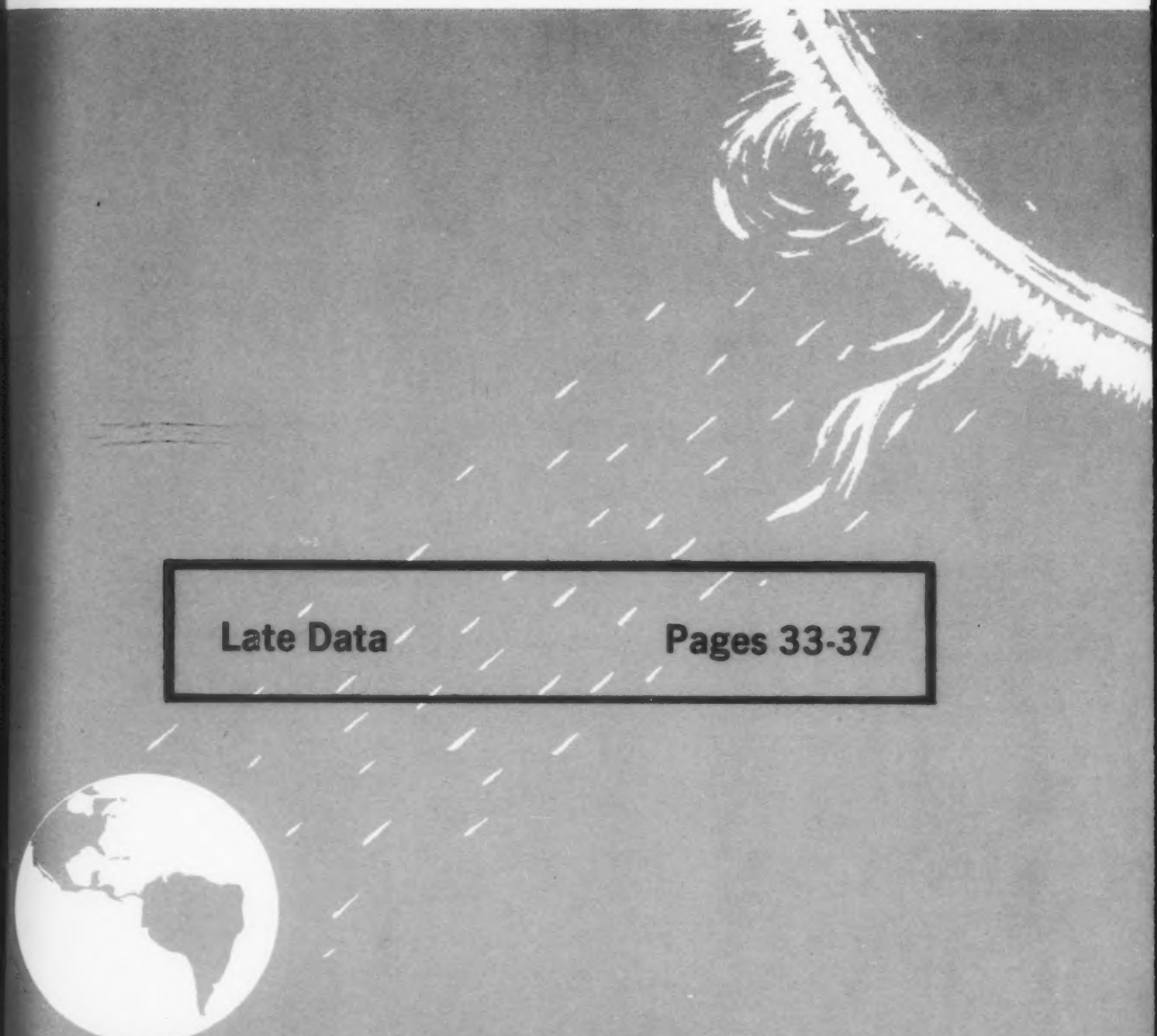
JULY 1982 NUMBER 455 -- Part II

P-A STATE

Solar-Geophysical Data comprehensive reports

Data for January 1982 & Miscellanea

Explanation of Data Reports Issued as Number 450 (Supplement) February 1982



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Solar - Geophysical Data

NO. 455 JULY 1982

Part II (Comprehensive Reports)

DATA FOR
JANUARY 1982

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SOLAR-GEOPHYSICAL DATA

No. 455

Issued in two parts

Helen E. Coffey, Editor

Joe H. Allen, Chief
Solar-Terrestrial Physics Division

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"444A 52" listed under 1981 Jun means that the sunspot drawings for Jun 1981 were contained in Solar-Geophysical Data Number 444 - Part I, beginning on page 52.

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SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	208	VORO	44	NS	0000.0E		240.0D		11.0		
	221	ABST	44	NS	0600.0E	0615.2	180.0D	12.0			
	260	ONDR	44	NS	0820.0E		340.0D	4.0U			
	127	TORN	43	NS	0944.5	1034.8	85.0D	40.0	4.0		V1
	3750	TYKW	28	PRE	0028.0	0054.0	26.0	3.0	1.5		
	208	VORO	46	C	0054.0	0056.0	9.0	150.0D			
	2000	TYKW	45	C	0054.0	0056.4	8.0	122.0	35.0		
	9400	TYKW	45	C	0054.0	0057.1	16.0	420.0	95.0		
	3750	TYKW	45	C	0054.0	0057.1	16.0	173.0	45.0		
	245	PALE	49	GB	0054.3	0058.3	19.0	690.0			
	200	HIRA	41	F	0054.4	0056.1	9.0	360.0			0
	1000	TYKW	45	C	0054.5	0056.8	8.0	40.0	9.0		
	8800	PALE	47	GB	0054.5	0057.3	12.0	480.0			
	4995	LEAR	47	GB	0054.6	0057.0	9.9	230.0			
	410	PALE	47	GB	0054.8	0056.1	9.2	189.0			
	1415	PALE	47	GB	0055.0	0056.3	9.0	83.0			
	500	HIRA	45	C	0055.0	0056.6	4.0	26.0	16.0		WL
	4995	PALE	47	GB	0055.0	0057.1	9.6	239.0			
	2695	LEAR	47	GB	0055.0	0057.1	10.6	180.0			
	610	PALE	47	GB	0055.0	0057.3	13.0	50.0			
	2695	MANI	4	S/F	0055.0	0057.8	9.0	118.0	39.3		
	1415	LEAR	47	GB	0055.1	0057.1	9.4	200.0			
	8800	LEAR	47	GB	0055.1	0057.1	12.9	430.0			
	100	HIRA	46	C	0055.3		9.6	980.0D	210.0D		
	100	HIRA			0055.3	0056.5		930.0			
	15400	PALE	47	GB	0055.3	0057.1	10.0	390.0			
	15400	LEAR	49	GB	0055.3	0057.1	15.8	580.0			
	2695	PALE	47	GB	0055.3	0057.3	8.2	160.0			
	1415	MANI	3	S	0055.5	0057.0	4.5	62.7	20.9		
	4995	MANI	4	S/F	0055.5	0057.8	8.5	67.9	22.6		
	35000	NAGO	45	C	0056.0	0057.0	21.0	47.0			
	606	MANI	4	S/F	0056.0	0057.4	3.0	11.6	3.9		
	8800	MANI	4	S/F	0056.0	0057.8	7.0	26.3	8.8		
	2000	TYKW	30	PBI	0102.0		60.0	4.0	1.0		
	9400	TYKW	30	PBI	0110.0		50.0	14.0	4.0		
	3750	TYKW	30	PBI	0110.0		50.0	6.0	2.5		
	3750	TYKW	5	S	0129.0	0132.3	11.0	24.0	10.0		
	2000	TYKW	5	S	0129.0	0132.3	11.0	13.0	6.0		
	2695	LEAR	20	GRF	0129.6	0132.8	5.9	23.0			
	4995	LEAR	20	GRF	0129.8	0132.8	7.3	18.0			
	9400	TYKW	5	S	0130.0	0133.0	9.0	9.0	4.0		
	2695	MANI	3	S	0130.0	0133.0	9.0	18.9	6.3		
	4995	MANI	3	S	0130.0	0133.8	8.0	34.9	11.6		
	8800	MANI	3	S	0130.0	0134.0	8.0	56.4	18.8		
	1415	LEAR	20	GRF	0130.3	0132.5	4.8	09.0			
	2000	TYKW	21	GRF	0313.0	0355.0	180.0	2.0	1.0		
	3750	TYKW	21	GRF	0314.0E	0324.0	175.0D	4.0	2.0D		
	2000	TYKW	5	S	0412.0	0413.3	15.0	3.0	1.0		
	9400	TYKW	5	S	0425.0	0425.6	1.5	5.0	1.5		
	2000	TYKW	20	GRF	0433.0	0437.0	35.0	3.0	1.5		
	3750	TYKW	5	S	0434.0	0435.6	15.0	2.0	1.0		
	2000	TYKW	5	S	0532.0	0534.0	20.0	4.0	1.5		
	3750	TYKW	5	S	0532.0	0534.0	10.0	3.5	1.0		
	2000	TYKW	5	S	0634.5	0635.0	1.5	4.0	1.5		
	9400	TYKW	5	S	0634.5	0635.0	1.5	8.0	2.5		
	1000	TYKW	5	S	0634.5	0635.1	1.5	2.0	.7		
	3750	TYKW	5	S	0634.5	0635.1	1.5	3.0	1.0		
	536	ONDR	8	S	0925.6	0925.7	.3	11.0			
	536	ONDR	8	S	1136.0	1136.1	.2	32.0			
	260	ONDR	8	S	1231.7	1231.8	.2	20.0			
	536	ONDR	8	S	1232.0	1232.0	.1	58.0			
	536	ONDR	8	S	1257.7	1257.8	.1	124.0			
	260	ONDR	8	S	1257.8	1258.1	.5	122.0			
	2800	OTTA			1348.0	1353.0	12.0D	10.8			
	2800	OTTA	1	S	1643.3	1643.8	3.0	2.6	1.3		
	15400	SGMR	4	S/F	1736.8	1742.8	18.3	74.0			
	8800	SGMR	20	GRF	1738.8	1743.1	6.2	30.0			
	2800	OTTA	20	GRF	1925.0	1932.0	30.0	2.8	1.4		
	2800	OTTA	3	S	2105.5	2108.5	9.5	10.8	5.0		
	15400	PALE	4	S/F	2107.8	2109.1	2.8	43.0			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	4995	PALE	47	GB	2108.1	2109.1	2.9	52.0			
	8800	PALE	47	GB	2108.1	2109.1	6.4	76.0			
	2695	PENT	29	PBI	2115.0	2115.0	25.0	3.6	1.8		
	9400	TYKW	5	S	2240.0	2248.5	20.0	9.0	3.0		
	3750	TYKW	21	GRF	2350.0	0055.0	130.0	6.0	3.0		
02	3750	TYKW	5	S	0013.0	0014.0	2.5	2.5	.7		
	9400	TYKW	21	GRF	0030.0	0058.0	70.0	7.0	2.5		
	3750	TYKW	5	S	0042.0	0044.9	11.0	12.0	3.0		
	100	HIRA	46	C	0044.0	0044.3	1.3	960.0	310.0		
	9400	TYKW	5	S	0044.0	0045.0	5.0	27.0	8.0		
	200	HIRA	46	C	0044.3	0044.5	.9	120.0	28.0		0
	8800	PALE	4	S/F	0044.3	0045.0	3.5	37.0			
	4995	PALE	8	S	0044.5	0044.8	1.8	24.0			
	2695	LEAR	8	S	0044.5	0045.0	1.6	08.0			
	4995	LEAR	8	S	0044.5	0045.0	1.6	19.0			
	8800	LEAR	4	S/F	0044.5	0045.0	2.6	30.0			
	15400	LEAR	8	S	0044.6	0045.3	1.2	13.0			
	15400	PALE	8	S	0044.8	0044.8	.2	21.0			
	9400	TYKW	29	PBI	0049.0		5.0	3.0	1.5		
	3750	TYKW	20	GRF	0210.0	0240.0	80.0	2.0	1.0		
	2000	TYKW	5	S	0442.6	0443.0	1.0	2.0	.7		
	3750	TYKW	5	S	0442.6	0443.1	2.0	6.0	1.5		
	2000	TYKW	5	S	0458.0	0459.6	15.0	3.0	1.0		
	3750	TYKW	45	C	0607.0	0611.2	8.0	165.0	33.0		
	6100	KISV	46	C	0607.0U	0611.5U	7.0U	175.0			
	9400	TYKW	47	GB	0608.0	0611.2	7.0	750.0	150.0		
	1415	ATHN	4	S/F	0608.3	0611.3	5.8	26.0			
	4995	ATHN	47	GB	0608.3	0611.3	7.2	180.0			
	2695	MANI	4	S/F	0608.8	0610.2	6.2	117.0	39.0		
	8800	MANI	47	GB	0609.0	0610.1	5.0	928.8	309.6		
	4995	MANI	4	S/F	0609.0	0610.2	6.0	303.0	101.0		
	15000	KISV	46	C	0609.0E	0611.0U	6.0D	530.0D			
	8800	LEAR	49	GB	0609.0	0611.1	14.3	720.0			
	4995	LEAR	47	GB	0609.0	0611.1	14.3	210.0			
	2000	TYKW	5	S	0609.0	0611.2	6.0	89.0	23.0		
	1000	TYKW	5	S	0609.0	0611.3	6.0	17.0	6.0		
	8800	ATHN	49	GB	0609.0	0611.3	5.0	890.0			
	2695	LEAR	47	GB	0609.1	0611.1	14.2	130.0			
	2695	ATHN	47	GB	0609.1	0611.3	5.0	90.0			
	1415	MANI	4	S/F	0609.4	0611.4	5.6	31.1	10.4		
	15400	LEAR	49	GB	0609.5	0611.1	14.1	1300.0			
	100	HIRA	42	SER	0609.6	0611.0	14.0	495.0			
	500	HIRA	45	C	0610.1	0610.4	2.5	14.0	4.0		0
	1415	LEAR	47	GB	0610.1	0611.1	4.5	50.0			
	606	MANI	2	S/F	0610.5	0610.8	2.5	6.3	2.1		
	200	HIRA	46	C	0610.6	0610.9	.3	2000.0	95.0		0
	35000	NAGO	5	S	0611.0	0611.0	3.0	256.0			
	6100	KISV	29	PBI	0613.0	0614.0	40.0	12.0			
	9400	TYKW	30	PBI	0615.0		55.0D	15.0	10.0D		
	2000	TYKW	30	PBI	0615.0		35.0	3.0	1.5		
	3750	TYKW	30	PBI	0615.0		50.0	6.0	3.0		
	2000	TYKW	5	S	0616.0	0616.6	1.5	4.0	1.5		
	3750	TYKW	5	S	0616.0	0618.0	7.0	3.0	1.5		
	9400	TYKW	5	S	0616.0	0618.0	20.0	9.0	4.0		
	260	ONDR	8	S	1008.0	1008.1	.2	7.0			
	260	ONDR	40	F	1050.3	1051.0	4.0	5.0	46.0		
	260	ONDR	41	F	1144.2	1147.4	3.5	4.0	21.0		
	260	ONDR	8	S	1331.7	1331.8	.2	9.0			
	2800	OTTA	20	GRF	1600.0	1630.0	55.0	2.2	1.1		
	2800	OTTA	20	GRF	1710.0	1755.0	110.0	2.2	1.1		
	245	PALE	47	GB	2254.8	2254.8	.1D	230.0			
	1000	TYKW	5	S	2254.8	2255.0	1.0	7.0	1.5		
	3750	TYKW	5	S	2254.8	2255.0	1.0	3.5	1.5		
	2000	TYKW	5	S	2254.8	2255.2	1.0	2.0	.7		
03	9400	TYKW	21	GRF	0010.0	0030.0	70.0	4.0	2.0		
	2000	TYKW	21	GRF	0010.0	0045.0	80.0	2.0	1.0		
	3750	TYKW	21	GRF	0010.0	0055.0	85.0	3.0	1.5		
	2000	TYKW	45	C	0011.0	0018.5	12.0	183.0	10.0		

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
03	3750	TYKW	45	C	0011.0	0018.5	12.0	20.0	5.0		
	4995	LEAR	4	S/F	0011.6	0014.8	8.4	17.0			
	1415	LEAR	47	GB	0011.8	0018.5	7.5	300.0			
	208	VORO	4	S/F	0012.0	0012.0	4.0	54.0			
	1000	TYKW	28	PRE	0012.0	0014.0	5.5	4.0	2.0		
	2695	LEAR	47	GB	0012.0	0018.5	6.6	63.0			
	8800	LEAR	4	S/F	0012.1	0018.3	7.7	13.0			
	200	HIRA	46	C	0012.3	0013.0	6.4	50.0	6.0		0
	15400	LEAR	8	S	0012.3	0013.1	1.7	11.0			
	100	HIRA	42	SER	0012.3	0022.6	14.6	970.0			
	2695	PALE	47	GB	0017.5	0018.5	1.0D	64.0			
	1415	PALE	47	GB	0017.5	0018.5	1.0D	320.0			
	1000	TYKW	45	C	0017.5	0018.6	4.0	335.0	35.0		
	1415	MANI	4	S/F	0017.5	0019.0	4.5	243.8	81.3		
	2695	MANI	4	S/F	0017.6	0019.0	2.4	26.6	26.6		
	500	HIRA	45	C	0017.7	0018.4	2.0	22.0	7.0		0
	9400	TYKW	45	C	0018.0	0018.4	.7	8.0	1.5		
	610	PALE	4	S/F	0018.1	0018.6	.5D	30.0			
	606	MANI	4	S/F	0018.1	0019.0	2.9	46.8	15.6		
	15400	PALE	4	S/F	0018.5	0018.6	.1D	38.0			
	3750	TYKW	20	GRF	0140.0	0145.0	40.0	1.5	.7		
	1000	TYKW	20	GRF	0140.0	0205.0	50.0	3.0	1.5		
	2000	TYKW	20	GRF	0145.0	0150.0	30.0	2.0	1.0		
	3750	TYKW	20	GRF	0350.0	0430.0	90.0	4.0	2.0		
	2000	TYKW	20	GRF	0400.0	0430.0	80.0	2.0	1.0		
	9400	TYKW	5	S	0443.5	0444.2	1.5	7.0	1.5		
	3750	TYKW	20	GRF	0545.0	0559.0	35.0	2.0	1.0		
	6100	KISV	2	S/F	0642.5	0643.5	3.0	3.0			
	3750	TYKW	5	S	0643.0	0643.3	3.0	4.0	1.5		
	2000	TYKW	5	S	0643.0	0643.4	3.0	6.0	2.0		
	1000	TYKW	5	S	0643.0	0643.4	1.0	1.5	.5		
	930	BORD	45	C	0836.0E	0838.0	30.0D	2730.0U	700.0U		
	260	ONDR	8	S	0957.8	0957.8	.6	12.0			
	260	ONDR	8	S	1004.2	1004.6	.8	6.0			
	260	ONDR	8	S	1219.2	1219.3	.3	7.0			
	536	ONDR	8	S	1254.0	1254.0	.1	40.0			
	260	ONDR	8	S	1254.1	1254.1	.2	24.0			
	260	ONDR	8	S	1333.8	1333.9	.3	61.0U			
	536	ONDR	8	S	1333.9	1333.9	.1	122.0			
	260	ONDR	8	S	1409.0	1409.4	.3	133.0			
	536	ONDR	8	S	1409.4	1409.4	.3	117.0			
	2800	OTTA	20	GRF	1435.0	1510.0	100.0	3.8	2.7		
	2800	OTTA	21	GRF	1448.0	1456.0	50.0	9.6	6.2		
	2800	OTTA	40	F	1452.5	1453.6	2.0	16.8			
04	3750	TYKW	20	GRF	0040.0	0047.0	30.0	1.5	.7		
	9400	TYKW	20	GRF	0040.0	0047.0	30.0	3.0	1.5		
	3750	TYKW	5	S	0125.0	0125.5	3.0	2.5	1.0		
	2000	TYKW	5	S	0125.0	0125.6	1.5	2.0	.7		
	3750	TYKW	20	GRF	0320.0	0340.0	110.0	7.0	2.0		
	2000	TYKW	20	GRF	0330.0	0340.0	100.0	2.0	1.0		
	9400	TYKW	20	GRF	0336.0	0339.6	75.0	9.0	2.5		
	2695	LEAR	8	S	0554.1	0554.5	.7	11.0			
	3750	TYKW	5	S	0554.2	0554.6	1.0	7.0	2.0		
	2000	TYKW	5	S	0554.2	0554.6	1.0	7.0	2.5		
	9400	TYKW	5	S	0700.0	0700.7	2.0	15.0	5.0		
	3750	TYKW	5	S	0700.0	0700.7	2.0	5.0	1.5		
	2000	TYKW	5	S	0700.0	0700.7	2.0	6.0	2.0		
	536	ONDR	8	S	0801.0	0801.1	.1	41.0U			
	930	BORD	8	S	1057.6	1057.6	.2	28.0	1.0		
	536	ONDR	41	F	1059.1	1059.8	2.4	6.0	2.0		
	930	BORD	8	S	1059.2	1059.2	.2	51.0	1.0		
	260	ONDR	8	S	1059.4	1059.4	.2	6.0			
	260	ONDR	8	S	1144.3	1144.4	.4	49.0			
	810	KRAK	8	S	1158.8	1159.0	.6	7.0			
	536	ONDR	8	S	1244.2	1244.2	.1	41.0			
	2800	OTTA	20	GRF	1930.0	2010.0	65.0	2.4	1.4		
	2695	PENT	1	S	2140.0	2142.0	8.0	3.0	1.5		
	9400	TYKW	5	S	2351.2	2351.5	.8	12.0	3.0		
	245	PALE	47	GB	2359.5	2359.8	.3U	139.0			

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
05	221	ABST	44	NS	0600.0E	0707.0	180.0D	140.0			
	3750	TYKW	5	S	0411.0	0412.1	12.0	2.0	.7		
	3750	TYKW	5	S	0501.0	0502.2	10.0	1.5	.5		
	2000	TYKW	5	S	0501.0	0502.2	10.0	3.0	1.0		
	930	BORD	8	S	1103.0	1103.0	.2	74.0	1.0		
	260	ONDR	8	S	1103.9	1103.9	.1	11.0			
	536	ONDR	8	S	1147.7	1147.8	.1	24.0			
	260	ONDR	8	S	1147.8	1147.9	.3	72.0			
	930	BORD	41	F	1242.4	1242.4	.2	31.0	2.0		
	930	BORD	8	S	1421.8	1421.9	.2	20.0	2.0		
06	6100	KISV	4	S/F	0626.7	0629.4	5.0	5.0			
	127	TORN	45	C	0810.7	0811.6	2.5D	1300.0	720.0		
	260	ONDR	40	F	0930.8	0931.0	2.0	4.0	2.0		
	260	ONDR	40	F	0954.9	0956.3	10.0	8.0	2.0		
	930	BORD	8	S	1105.6	1105.7	.4	50.0	2.0		
	930	BORD	41	F	1354.0	1355.6	1.7	37.0	2.0		
	2800	OTTA	21	GRF	1945.0	2035.0	95.0	4.8	2.4		
	2695	PENT	1	S	1959.0	2002.0	5.0	2.8	1.6		
	3750	TYKW	5	S	2318.5	2319.2	3.0	4.0	1.0		
	4995	LEAR	8	S	2318.6	2319.1	1.4	16.0			
	8800	LEAR	8	S	2318.8	2319.1	1.2	08.0			
07	221	ABST	44	NS	0600.0E	0630.0	180.0D	18.0			
	208	VORO	4	S/F	0138.0	0138.0	1.0	100.0D			
	2000	TYKW	20	GRF	0220.0	0234.8	60.0	5.0	2.0		
	3750	TYKW	21	GRF	0220.0	0245.0	60.0	5.0	2.0		
	9400	TYKW	20	GRF	0229.0	0235.0	60.0	6.0	2.5		
	3750	TYKW	5	S	0230.0	0234.8	9.0	8.0	2.5		
	4995	LEAR	4	S/F	0232.3	0234.8	3.7	11.0			
	8800	LEAR	4	S/F	0232.3	0234.8	3.5	07.0			
	2950	GORK	20	GRF	0803.0	0824.0	117.0	6.0	3.0		
	430	KRAK	8	S	0939.0	0939.1	.2	36.0			
	260	ONDR	41	F	0940.6	0941.0	.8	3.0	2.0		
	930	BORD	8	S	1053.4	1053.4	.1	59.0	1.0		
	3200	BERN	3	S	1211.0	1216.9	17.0	16.0			
	5200	BERN	3	S	1211.0	1218.8	17.0	26.0			
	3000	POTS	20	GRF	1213.0	1217.7	39.0	14.0			
	1470	POTS	20	GRF	1213.0	1231.0	28.0	2.4			
	9500	POTS	20	GRF	1214.0	1220.0	36.0	7.0			
	2650	DWIN	1	S	1220.0	1224.0	8.0	10.0	5.0		
	930	BORD	8	S	1334.7	1334.7	.1	25.0	1.0		
	536	ONDR	40	F	1350.0	1351.9	5.0	1.0	1.0		
	4995	SGMR	8	S	1422.8	1423.3	1.0	20.0			
	5200	BERN	3	S	1423.0	1423.6	5.0	19.0			
	930	BORD	8	S	1433.8	1433.8	.1	26.0	1.0		
	4995	SGMR	8	S	1553.5	1553.8	1.0U	17.0			
	2800	OTTA	21	GRF	1615.0	1650.0	120.0	4.6	2.6		
	4995	SGMR	8	S	1656.8	1657.1	.7	24.0			
	8800	SGMR	8	S	1657.0	1657.1	.5	32.0			
	2800	OTTA	1	S	1657.0	1657.3	1.5	9.0	3.0		
	2800	OTTA	3	S	1937.5	1939.0	2.5	14.2	7.1		
	15400	SGMR	4	S/F	1937.6	1938.6	4.4	25.0			
	8800	SGMR	47	GB	1937.6	1938.6	4.2	61.0			
	4995	SGMR	4	S/F	1937.6	1938.8	3.7	48.0			
	2800	OTTA	29	PBI	1940.0	1940.0	8.0	3.4	2.0		
	3750	TYKW	5	S	2353.0	2355.6	6.0	3.0	.7		
08	3750	TYKW	20	GRF	0010.0	0028.0	70.0	3.0	1.5		
	3750	TYKW	28	PRE	0130.0	0155.5	31.5	6.0	3.0		
	9400	TYKW	28	PRE	0135.0	0202.0	27.0	4.0	2.0		
	3750	TYKW	5	S	0201.5	0202.8	3.0	95.0	25.0		
	9400	TYKW	5	S	0202.0	0202.7	2.0	170.0	45.0		
	2000	TYKW	21	GRF	0202.0	0230.0	110.0	3.0	1.5		
	8800	PALE	47	GB	0202.1	0202.6	4.2	200.0			
	4995	LEAR	47	GB	0202.1	0202.6	1.9	130.0			
	8800	LEAR	47	GB	0202.1	0202.6	2.4	189.0			
	2000	TYKW	45	C	0202.3	0202.6	1.5	23.0	4.0		
	15400	LEAR	47	GB	0202.3	0202.6	1.3	96.0			
	15400	PALE	47	GB	0202.3	0202.6	.5	100.0			

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
08	2695	LEAR	8	S	0202.5	0202.6	.3	22.0			
	3750	TYKW	30	PBI	0203.5		65.0	10.0	5.0		
	3750	TYKW	45	C	0203.8	0204.0	3.0	2.0	1.0		
	9400	TYKW	30	PBI	0204.0		65.0	12.0	5.0		
	9400	TYKW	45	C	0204.7	0205.0	3.0	5.0	1.5		
	3750	TYKW	45	C	0209.0	0210.6	10.0	3.0	1.5		
	9400	TYKW	5	S	0210.0	0215.0	15.0	5.0	2.0		
	3750	TYKW	5	S	0328.0	0330.0	7.0	2.0	1.0		
	3750	TYKW	21	GRF	0420.0	0500.0	110.0	4.0	2.0		
	2000	TYKW	20	GRF	0425.0	0437.0	80.0	3.0	1.5		
	3750	TYKW	5	S	0537.0	0539.0	6.0	3.0	1.5		
	9400	TYKW	20	GRF	0537.0	0540.0	40.0	5.0	2.0		
	3750	TYKW	45	C	0619.0	0620.3	5.0	4.0	1.5		
	6100	KISV	1	S	0628.6	0628.9	.5	4.0			
	3750	TYKW	45	C	0636.0	0638.5	5.0	3.0	1.0		
	6100	KISV	45	C	0810.7	0811.1	4.0	4.0			
	6100	KISV			0810.7	0812.6		5.0			
	6100	KISV	4	S/F	0912.3	0912.9	2.0	9.0			
	9100	GORK	1	S	0912.4	0912.9	4.0	11.0			
	6100	KISV	27	RF	0933.0	1000.0	50.0	8.0			
	9100	GORK	22	GRF	0935.8	0944.0	64.6	19.0			
	6100	KISV	45	C	0938.5	0939.5	2.0	8.0			
	9500	POTS	22	GRF	0938.5	0944.0	17.0	13.0			
	3000	POTS	20	GRF	0940.0	1000.0	24.0	7.0			
	2950	GORK	20	GRF	0940.4	1000.0	51.0	5.0	2.5		
	4995	LEAR	8	S	0943.1	0944.6	2.0	13.0			
	8800	LEAR	8	S	0943.3	0943.8	1.8	20.0			
	6100	KISV	45	C	0943.4	0944.0	1.5	8.0			
	6100	KISV			0943.4	0944.5		8.0			
	2695	LEAR	8	S	0943.6	0944.8	1.5	10.0			
	6100	KISV	45	C	0946.3	0946.6	1.0	5.0			
	6100	KISV	1	S	0948.0	0948.7	2.0	4.0			
	810	KRAK	8	S	0955.1	0955.2	.2	57.0			
	6100	KISV	1	S	1018.0	1018.3	1.0	5.0			
	930	BORD	8	S	1100.3	1100.3	.1	22.0	1.0		
	9500	POTS	1	S	1121.5	1121.7	.1	7.0			
	260	ONDR	40	F	1132.3	1133.0	1.2	6.0	2.0		
	5200	BERN	8	S	1301.0	1301.2	1.0	17.0			
	930	BORD	8	S	1321.0	1321.0	.1	56.0	1.0		
	2800	OTTA	21	GRF	1400.0	1445.0	110.0	8.2	4.1		
	3200	BERN	3	S	1423.0	1427.9	20.0D	31.0			
	5200	BERN	3	S	1423.0	1427.9	20.0D	44.0			
	2800	OTTA	3	S	1426.0	1428.0	5.0	15.4	6.0		
	8800	ATHN	4	S/F	1426.6	1428.6	4.0	21.0			
	4995	SGMR	4	S/F	1426.8	1427.8	26.2	40.0			
	8800	SGMR	4	S/F	1427.0	1428.3	23.0	34.0			
	8400	BERN	3	S	1427.4	1428.3	7.0U	21.0			
	4995	ATHN	4	S/F	1427.6	1428.1	5.5	23.0			
	2695	ATHN	4	S/F	1427.6	1428.1	3.4	17.0			
	15400	SGMR	4	S/F	1428.1	1429.6	24.9	23.0			
	2650	DWIN	1	S	1434.0	1435.0	5.0	15.0	8.0		
	9400	TYKW	5	S	2256.0	2256.6	2.0	7.0	3.0		
	1000	TYKW	5	S	2256.0	2256.6	2.0	1.5	.5		
	3750	TYKW	45	C	2256.0	2256.6	2.0	5.0	2.0		
	2000	TYKW	5	S	2256.0	2256.6	2.0	4.0	1.5		
	3750	TYKW	20	GRF	2315.0	2321.3	35.0	3.0	1.0		
	9400	TYKW	5	S	2319.0	2322.0	25.0	3.0	1.5		
09	260	ONDR	43	NS	1000.0	1239.0U	248.0D	16.0U			
	1000	TYKW	45	C	0013.5	0019.3	10.0	17.0	1.5		
	9400	TYKW	20	GRF	0220.0	0230.0	30.0	4.0	2.0		
	9400	TYKW	5	S	0440.0	0444.0	22.0	3.0	1.5		
	2000	TYKW	21	GRF	0508.0	0535.0	105.0U	6.0	3.0		
	3750	TYKW	20	GRF	0510.0	0532.0	105.0	8.0	4.0		
	9400	TYKW	21	GRF	0510.0	0542.0	105.0	10.0	5.0		
	1000	TYKW	45	C	0516.0	0532.6	21.0	48.0	5.0		
	2000	TYKW	45	C	0519.0	0524.3	8.0	7.0	1.5		
	500	HIRA	48	C	0529.0	0608.9	76.0	1300.0	300.0		SR
	2000	TYKW	5	S	0529.5	0532.0	5.0	16.0	3.0		
	2695	MANI	3	S	0530.0	0532.7	5.0	13.0	4.3		

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
09	1415	MANI	4	S/F	0530.0	0532.8	5.0	36.0	12.0		
	200	HIRA	46	C	0530.0	0533.0	7.0	100.0	7.0		0
	1415	LEAR	4	S/F	0530.1	0532.3	5.0	40.0			
	606	MANI	4	S/F	0531.2	0533.1	3.8	32.5	10.8		
	1000	TYKW	45	C	0545.0	0547.6	6.0	23.0	2.0		
	606	MANI	47	GB	0545.0	0609.3	51.0	1303.4	434.5		
	9400	TYKW	5	S	0548.5	0548.7	1.5	5.0	1.5		
	1000	TYKW	47	GB	0551.5	0559.4	43.0	2490.0	375.0		
	1000	TYKW			0551.5	0613.2		580.0			
	1000	TYKW			0551.5	0628.1		735.0			
	200	HIRA	46	C	0552.3	0559.2	44.0	56.0	14.0		MR
	200	HIRA			0552.3	0603.6		15.0			MR
	200	HIRA			0552.3	0621.6		20.0			MR
	1415	MANI	47	GB	0556.2	0601.2	32.8	560.0	186.7		
	1415	ATHN	47	GB	0558.8	0600.8	2.8	169.0			
	1415	LEAR	47	GB	0559.1	0600.8	2.2	180.0			
	650	GORK	46	C	0612.0E	0612.7	3.3D	990.0			
	2000	TYKW	5	S	0612.0	0612.7	2.0	4.0	1.5		
	950	GORK	46	C	0612.0E	0614.8	23.7D	367.0			
	950	GORK			0612.0E	0628.7		552.0			
	650	GORK			0612.0E	0630.6		330.0			
	950	GORK			0612.0E	0631.6		623.0			
	650	GORK			0612.0E	0632.5		340.0			
	1415	LEAR	47	GB	0612.3	0612.6	4.7	54.0			
	6100	KISV	1	S	0615.8	0616.0	.8	4.0			
	9100	GORK	20	GRF	0721.8	0734.7	212.0	40.0			
	8800	ATHN	20	GRF	0729.0	0734.6	14.3	44.0			
	2950	GORK	21	GRF	0729.5	0739.0	209.0	14.0			
	6100	KISV	4	S/F	0730.0	0734.5	7.5	27.0			
	2695	MANI	3	S	0730.7	0735.1	7.1	33.1	11.0		
	4995	ATHN	20	GRF	0731.0	0734.5	12.3	37.0			
	4995	MANI	3	S	0731.0	0735.1	6.5	57.3	19.1		
	4995	LEAR	4	S/F	0732.3	0734.6	11.7	37.0			
	8800	MANI	3	S	0732.5	0735.1	5.0	44.8	14.9		
	8800	LEAR	4	S/F	0732.8	0734.6	11.2	30.0			
	2950	GORK	3	S	0732.8	0734.7	4.9	26.0	13.0		
	2695	ATHN	20	GRF	0732.8	0734.8	10.5	32.0			
	3000	IZMI	4	S/F	0733.0	0734.5	3.8	29.0	15.0		
	2695	LEAR	4	S/F	0733.0	0734.6	10.8	40.0			
	1415	MANI	1	S	0733.2	0735.0	3.3	9.3	3.1		
	1415	ATHN	20	GRF	0733.3	0734.8	10.0	11.0			
	430	KRAK	42	SER	0918.7	0930.4	38.0	100.0			
	430	KRAK			0918.7	0950.7		850.0D			
	430	KRAK			0918.7	0955.3		160.0			
	430	KRAK	8	S	1116.7	1116.7	.2	21.0			
	9500	POTS	29	PBI	1123.8	1125.3	61.0	27.0			
	6100	KISV	4	S/F	1123.8	1125.5	2.5	25.0			
	3200	BERN	3	S	1124.0	1125.5	9.0D	15.0			
	5200	BERN	3	S	1124.0	1125.5	9.0D	47.0			
	8400	BERN	3	S	1124.0	1125.5	3.0U	39.0			
	8800	ATHN	4	S/F	1124.0	1125.5	5.1	34.0			
	4995	ATHN	4	S/F	1124.1	1125.6	4.5	33.0			
	3000	POTS	3	S	1124.5	1125.5	6.5	11.0			
	430	KRAK	8	S	1216.9	1216.9	.6	68.0			
	810	KRAK	46	C	1343.8	1352.4	16.0D	160.0	26.0D		
	810	KRAK			1343.8	1358.9		140.0			
	930	BORD	46	C	1345.0	1359.2	40.0	152.0	11.0		
	808	ONDR	46	C	1347.0	1352.0U	25.0D	38.0U			
	536	ONDR	46	C	1347.0	1359.0U	21.0D	24.0U			
	2650	DWIN		GRF	1355.0	1420.0	60.0U	10.0	10.0		SUNSET
	610	SGMR	47	GB	1355.3	1355.8	4.0	50.0			
	1415	SGMR	47	GB	1357.8	1358.3	2.3	51.0			
	430	KRAK	3	S	1357.9	1359.0	2.1	36.0	8.0		
	410	SGMR	8	S	1358.6	1359.1	.7	29.0			
	15400	SGMR	4	S/F	1407.5	1411.1	19.5	36.0			
	1415	SGMR	47	GB	1408.1	1410.3	18.9	130.0			
	3200	BERN	3	S	1410.0	1411.4	3.0	14.0			
	4995	SGMR	4	S/F	1410.3	1411.1	16.7	48.0			
	8800	SGMR	4	S/F	1410.5	1411.1	16.5	48.0			
	8800	ATHN	4	S/F	1410.5	1411.3	2.5	37.0			

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09	4995	ATHN	8	S	1410.8	1411.3	2.0	33.0			
	8400	BERN	3	S	1410.9	1411.4	3.0	35.0			
	5200	BERN	3	S	1410.9	1411.4	3.0	45.0			
	410	SGMR	4	S/F	1414.0	1415.1	13.0	19.0			
	2800	OTTA	20	GRF	1417.0	1417.0	155.0D	11.8			
	3750	TYKW	21	GRF	2320.0	0005.0	130.0	2.0	1.0		
	3750	TYKW	5	S	2336.0	2336.4	2.0	4.0	1.0		
	200	TYKW	5	S	2336.0	2336.5	1.5	3.0	1.0		
10	260	ONDR	44	NS	0757.0E	0854.0U	57.0D				
	260	ONDR	43	NS	1020.0	1142.0	82.0D				
	245	PALE	43	NS	1745.0	1835.5	50.5D	13.0			
	245	SGMR	43	NS	1804.0	1958.8	180.0D	39.0			
	15400	LEAR	4	S/F	0225.1	0227.5	4.5	18.0			
	9400	TYKW	5	S	0226.0	0226.7	6.0	5.0	2.0		
	3750	TYKW	5	S	0243.0	0244.2	6.0	1.5	.5		
	3750	TYKW	5	S	0433.0	0434.6	4.0	6.0	3.5		
	3750	TYKW	29	PBI	0437.0		30.0	3.0	1.5		
	9400	TYKW	21	GRF	0535.0	0600.0	50.0	5.0	2.0		
	9400	TYKW	5	S	0550.0	0550.3	1.5	3.0	1.0		
	430	KRAK	8	S	1025.0	1025.0	.1	9.0			
	430	KRAK	8	S	1309.5	1309.5	.1	12.0			
	2800	OTTA	1	S	2036.0	2037.0	2.0	3.4	1.7		
	2800	OTTA	1	S	2040.1	2040.6	1.0	8.4	4.2		
	2800	OTTA	8	S	2041.7	2042.0	.6	2.0			
	2695	PENT	8	S	2209.3	2209.5	.7	2.4	1.0		
	3750	TYKW	5	S	2308.0	2309.0	3.0	5.0	2.0		
	9400	TYKW	5	S	2308.0	2309.0	3.0	14.0	5.0		
	2000	TYKW	5	S	2308.0	2309.1	3.0	4.0	1.5		
11	208	VORO	44	NS	0000.0E		240.0D		11.0		
	260	ONDR	44	NS	0822.0E		356.0D				
	245	PALE	43	NS	1750.0	1803.6	13.6D	110.0			
	3750	TYKW	20	GRF	0025.0	0105.0	140.0	3.0	1.5		
	127	TORN	47	GB	0917.0	0918.5	3.5	9000.0U	4500.0U		
	204	IZMI	41	F	0928.3	0931.5	5.5	270.0			
	930	BORD	41	F	1029.3	1030.5	2.5	27.0	2.0		
	930	BORD	8	S	1052.7	1052.7	.1	24.0	1.0		
	29	UPIC	45	C	1118.3U	1121.7	7.2U				
	33	UPIC	45	C	1119.5U	1121.7	5.4U				
	1470	POTS	3	S	1120.0	1121.7	5.0	6.0			
	3000	POTS	4	S/F	1120.0	1124.0	5.0	7.0			
	430	KRAK	8	S	1333.4	1333.5	.4	14.0			
12	208	VORO	44	NS	0000.0E		240.0D		15.0		
	260	ONDR	44	NS	0814.0E	1252.0U	363.0D	18.0			
	245	SGMR	43	NS	1455.0	1622.3	87.3D	50.0			
	245	PALE	43	NS	1810.0	2042.1	581.0D	219.0			
	9400	TYKW	5	S	0650.5	0650.8	1.0	11.0	3.0		
	930	BORD	8	S	1053.7	1053.7	.1	37.0	1.0		
	430	KRAK	8	S	1145.6	1145.7	.2	13.0	.3		
	29	UPIC	2	S/F	1156.6	1156.7	.8				
	33	UPIC	2	S/F	1156.7	1156.7	.8				
	430	KRAK	8	S	1233.8	1233.8	1.1	28.0			
	536	ONDR	4	S/F	1255.9	1256.3	1.0	9.0	6.0		
	610	SGMR	8	S	1638.5	1638.6	.1	27.0			
13	260	ONDR	44	NS	0824.0E		357.0D	4.0			
	3750	TYKW	28	PRE	0125.0	0128.0	4.0	5.0	3.0		
	2000	TYKW	28	PRE	0125.0	0129.0	4.0	2.0	1.0		
	9400	TYKW	28	PRE	0125.0	0129.0	4.0	3.0	2.0		
	1000	TYKW	45	C	0126.0	0135.2	20.0	35.0	4.0		
	2930	VORO	45	C	0127.0	0133.0	13.0	160.0			
	1415	LEAR	47	GB	0128.1	0132.5	10.9	67.0			
	500	HIRA	46	C	0128.3	0136.0	19.0	430.0	40.0		WR
	2695	LEAR	47	GB	0128.8	0133.6	10.3	169.0			
	3750	TYKW	45	C	0129.0	0133.7	16.0	200.0	40.0		
	2000	TYKW	45	C	0129.0	0133.8	16.0	102.0	22.0		
	9400	TYKW	45	C	0129.0	0134.5	11.0	82.0	30.0		
	4995	LEAR	47	GB	0129.1	0134.3	10.0	169.0			

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13	8800	LEAR	47	GB	0129.6	0134.3	9.4	100.0			
	606	MANI	4	S/F	0130.0	0138.7	9.5	56.7	18.9		
	8800	PALE	4	S/F	0130.3	0134.3	17.3	100.0			
	15400	LEAR	47	GB	0130.8	0134.3	8.5	53.0			
	410	PALE	47	GB	0131.6	0134.3	16.0	76.0			
	610	PALE	47	GB	0131.8	0133.8	15.8	51.0			
	2695	MANI	4	S/F	0132.0	0134.2	7.5	180.4	60.1		
	1415	MANI	4	S/F	0132.0	0134.5	5.0	34.6	11.5		
	4995	MANI	4	S/F	0132.0	0134.6	7.0	153.9	51.3		
	8800	MANI	4	S/F	0132.0	0134.6	6.0	86.0	28.7		
	35000	NAGO	20	GRF	0132.0	0143.0	38.0	25.0			
	1415	PALE	4	S/F	0132.1	0132.5	15.5	70.0			
	200	HIRA	48	C	0132.7	0139.6	55.0	2300.0	218.0		0
	208	VORO	49	GB	0133.0	0145.0U	49.0	200.0D			
	2695	PALE	4	S/F	0133.3	0133.6	14.3	92.0			
	15400	PALE	4	S/F	0133.6	0134.3	14.0	63.0			
	245	PALE	49	GB	0134.3	0138.1	13.3	540.0			
	100	HIRA	48	C	0135.3	0137.3	9.0	9000.0	1270.0		0
	9400	TYKW	29	PBI	0140.0		100.0	21.0	7.0		
	2000	TYKW	29	PBI	0145.0		95.0	5.0	2.0		
	3750	TYKW	29	PBI	0145.0		95.0	10.0	4.0		
	245	PALE	47	GB	0147.6	0148.0	6.5	90.0			
	245	PALE	8	S	0203.0	0203.3	.8	29.0			
	208	VORO	46	C	0245.0	0309.0	50.0	67.0			
	410	PALE	4	S/F	0246.6	0248.3	18.7	16.0			
	245	PALE	47	GB	0247.6	0250.8	17.7	42.0			
	606	MANI	3	S	0251.5	0254.0	7.5	71.4	23.8		
	610	PALE	47	GB	0252.1	0252.8	13.2	110.0			
	245	PALE	47	GB	0305.3	0309.1	9.5	110.0			
	200	HIRA	48	C	0345.6	0408.7	62.0	200.0	76.0		0
	500	HIRA	45	C	0348.0	0401.4	32.0	60.0	30.0		WR
	1000	TYKW	20	GRF	0350.0	0400.0	80.0	5.0	2.0		
	2000	TYKW	20	GRF	0350.0	0400.0	80.0	3.0	1.5		
	3750	TYKW	20	GRF	0355.0	0414.0	60.0	2.0	1.0		
	930	BORD	8	S	1047.5	1047.5	.1	37.0	1.0		
14	260	ONDR	44	NS	0813.0E		373.0D	4.0			
	3750	TYKW	21	GRF	0020.0	0050.0	90.0	3.0	1.5		
	3750	TYKW	5	S	0040.0	0042.0	6.0	1.5	.7		
	9400	TYKW	20	GRF	0040.0	0045.0	40.0	2.0	1.0		
	3750	TYKW	5	S	0455.0	0457.0	10.0	1.5	.7		
	9400	TYKW	5	S	0532.5	0532.9	1.5	6.0	2.0		
	9400	TYKW	5	S	0628.0	0628.6	2.0	5.0	2.0		
	430	KRAK	8	S	0954.2	0954.3	.3	8.0			
	930	BORD	41	F	1007.0	1007.1	.4	30.0	2.0		
	430	KRAK	42	SER	1019.6	1022.5	10.0	56.0			
	930	BORD	8	S	1041.9	1041.9	.1	55.0	1.0		
	430	KRAK	8	S	1043.0	1043.1	.2	6.0			
	200	GORK	2	S/F	1052.8	1053.4	.8	6.0			
	100	GORK	8	S	1052.9	1053.3	1.0	70.0			
	930	BORD	8	S	1053.3	1053.3	.1	38.0	1.0		
	950	GORK	4	S/F	1055.0	1055.6	1.1	47.0			
	650	GORK	4	S/F	1055.0	1055.9	1.3	17.0			
	430	KRAK	8	S	1204.9	1204.9	.2	10.0			
	930	BORD	8	S	1437.4	1437.4	.1	16.0	1.0		
	930	BORD	8	S	1537.5	1537.5	.1	30.0	1.0		
15	221	ABST	44	NS	0600.0E	0625.0	180.0D	17.0			
	200	GORK	44	NS	0624.0E		332.0D		5.0		
	100	GORK	44	NS	0625.0E		125.0D		10.0		
	127	TORN	43	NS	0700.0		410.0D		6.0		V1,DISTURBED
	260	ONDR	44	NS	0810.0E		352.0D	5.0			
	9400	TYKW	21	GRF	0020.0	0022.0	35.0	2.0	1.0		
	3750	TYKW	20	GRF	0020.0	0030.0	35.0	2.0	1.0		
	9400	TYKW	5	S	0033.3	0034.2	2.0	4.0	1.0		
	2000	TYKW	5	S	0311.0	0312.5	15.0	1.5	.7		
	3750	TYKW	20	GRF	0359.0	0403.0	85.0	2.0	1.0		
	2000	TYKW	20	GRF	0359.0	0440.0	85.0	2.0	1.0		
	9400	TYKW	20	GRF	0400.0	0440.0	100.0	3.0	1.5		
	536	ONDR	47	GB	0810.0E	0840.0U	188.0D				

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
15	430	KRAK	8	S	1207.9	1207.9	.2	10.0			
	930	BORD	8	S	1337.5	1337.5	.1	34.0	1.0		
	930	BORD	41	F	1347.8	1348.1	.5	74.0	2.0		
	2800	OTTA	1	S	1829.0	1829.9	1.5	7.2	3.6		
	2800	OTTA	29	PBI	1830.5	1830.5	5.0	2.2	1.1		
16	208	VORO	44	NS	0000.0E		240.0D		10.0		
	221	ABST	44	NS	0600.0E	0620.0	180.0D	16.0			
	200	GORK	44	NS	0608.0E		316.0D		5.0		
	127	TORN	43	NS	0850.0		350.0D		2.0		V1,DISTURBED
	260	ONDR	44	NS	0902.0E		310.0D	4.0			
	2000	TYKW	5	S	0456.0	0457.0	3.0	1.5	.5		
	9400	TYKW	5	S	0456.0	0500.0	15.0	5.0	2.0		
	3750	TYKW	20	GRF	0456.0	0500.0	50.0	4.0	1.5		
	2000	TYKW	21	GRF	0456.0	0520.0	65.0	2.0	1.0		
	3750	TYKW	5	S	0628.0	0630.7	6.0	3.0	.7		
	9400	TYKW	5	S	0629.0	0630.0	9.0	3.0	1.5		
	204	IZMI	5	S	1015.8	1016.0	.5	93.0	63.0		
	2800	OTTA	20	GRF	1820.0	1822.5	12.0	3.8	1.9		
	2800	OTTA	20	GRF	2010.0	2030.0	95.0	3.4	1.7		
17	208	VORO	44	NS	0000.0E		180.0D		10.0		
	200	HIRA	43	NS	0300.0	0610.0	600.0D	10.0	5.0		WR
	221	ABST	44	NS	0600.0E	0833.0	180.0D	10.0			
	200	GORK	44	NS	0620.0E		306.0D		5.0		
	204	IZMI	43	NS	0700.0		240.0D	22.0			
	127	TORN	43	NS	0746.0	1201.0	416.0D	27.0	15.0		V1
	260	ONDR	44	NS	0755.0E		371.0D	32.0U			
	245	PALE	43	NS	2100.1	2102.3	2.2D	30.0			
	200	HIRA	44	NS	2147.0E	0539.0	600.0D	50.0	15.0		MR
	9400	TYKW	5	S	0036.9	0037.0	.5	8.0	2.0		
	2000	TYKW	20	GRF	0347.0	0351.0	30.0	5.0	2.0		
	3750	TYKW	21	GRF	0347.0U	0352.0U	120.0U	5.0U	1.0		
	9400	TYKW	20	GRF	0347.0	0353.0	30.0	7.0	2.0		
	1000	TYKW	45	C	0349.0	0350.9	5.0	4.0	1.5		
	1000	TYKW	20	GRF	0400.0U	0407.0U	40.0U	2.0	1.0		
	2000	TYKW	20	GRF	0435.0	0450.0	80.0	2.0	1.0		
	3750	TYKW	5	S	0521.0	0524.0	12.0	1.0	.5		
	9400	TYKW	5	S	0521.0	0524.0	10.0	2.0	1.0		
	127	TORN	27	RF	1308.8		57.0		65.0		
	2800	OTTA	20	GRF	1510.0	1530.0	45.0	2.4	1.4		
	2800	OTTA	20	GRF	1705.0	1730.0	115.0	3.4	2.6		
	2800	OTTA	20	GRF	1915.0	1950.0	105.0	6.6			
	2000	TYKW	45	C	2300.0	2311.8	17.0	16.0	8.0		
	3750	TYKW	45	C	2304.0	2312.3	16.0	22.0	10.0		
	9400	TYKW	45	C	2305.0	2312.5	20.0	12.0	8.0		
	1000	TYKW	45	C	2309.0	2312.1	7.0	17.0	3.0		
	2000	TYKW	29	PBI	2317.0		150.0	8.0	4.0		
	3750	TYKW	29	PBI	2320.0		200.0	8.0	3.0		
	9400	TYKW	29	PBI	2325.0		30.0	7.0	3.0		
18	208	VORO	44	NS	0000.0E		240.0D		15.0		
	100	HIRA	43	NS	0508.0	0656.0	160.0D	90.0	20.0		MR
	221	ABST	44	NS	0600.0E	0715.0	180.0D	9.0			
	200	GORK	44	NS	0618.0E		342.0D		5.0		
	100	GORK	44	NS	0619.0E		276.0D		10.0		
	127	TORN	44	NS	0810.0E	1040.7	400.0D	920.0	9.0		V1
	260	ONDR	44	NS	0817.0E		361.0D	5.0U			
	245	SGMR	43	NS	1430.0	1750.0	403.0D	56.0			
	245	PALE	43	NS	1750.0	0155.3	485.3D	130.0			
	200	HIRA	44	NS	2146.0E	0542.0	600.0D	17.0	10.0		WR
	100	HIRA	44	NS	2146.0E	2200.0	310.0D	600.0U	60.0U		MR,SUNRISE
	3750	TYKW	20	GRF	0020.0	0105.0	120.0	4.0	2.0		
	3750	TYKW	20	GRF	0413.0	0423.0	30.0	2.0	1.0		
	2000	TYKW	5	S	0419.0	0422.5	7.0	1.5	.7		
	9400	TYKW	5	S	0431.8	0432.2	1.0	7.0	2.0		
	2000	TYKW	21	GRF	0515.0	0550.0	135.0	11.0	5.0		
	3750	TYKW	21	GRF	0525.0	0600.0U	120.0D	12.0	7.0D		
	9400	TYKW	21	GRF	0530.0	0610.0	120.0D	12.0	7.0D		
	1000	TYKW	47	GB	0535.0	0537.0	18.0	775.0	40.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
18	500	HIRA	45	C	0536.0	0537.2	17.0	12.0	5.0		MR
	2000	TYKW	45	C	0536.0	0538.0	3.0	10.0	3.0		
	606	MANI	4	S/F	0536.5	0537.0	7.2	17.7	5.9		
	1415	MANI	47	GB	0536.5	0538.0	7.0	936.1	312.0		
	2695	MANI	3	S	0536.5	0538.0	2.5	23.7	7.9		
	3750	TYKW	45	C	0537.0	0538.0	2.0	27.0	9.0		
	4995	MANI	3	S	0537.4	0538.3	1.6	19.5	6.5		
	9400	TYKW	8	S	0538.0	0538.1	.3	12.0	3.0		
	2000	TYKW	29	PBI	0539.0		9.0	3.0	1.5		
	1000	TYKW	29	PBI	0553.0		15.0	2.0	1.0		
	3750	TYKW	5	S	0603.0	0603.7	4.0	4.0	1.0		
	113	POTS	4	S/F	0739.9	0740.0	.8	200.0	50.0		III
	536	ONDR	20	GRF	0818.0E	0826.8	18.5D	15.0	14.0		
	430	KRAK	42	SER	0824.3	0826.9	50.0	29.0			
	810	KRAK	8	S	0920.3	0920.4	.2	22.0			
	430	KRAK	8	S	1009.9	1009.9	.2	12.0			
	430	KRAK	1	S	1033.6	1034.6	1.5	10.0	5.0		
	430	KRAK	42	SER	1110.2	1131.9	154.0	80.0			
	430	KRAK			1110.2	1259.2		200.0			
	33	UPIC	42	SER	1314.5		62.1				
	29	UPIC	42	SER	1314.7	1410.5U	61.6				
	2800	OTTA	21	GRF	1425.0	1442.0	80.0	5.6	2.5		
	2800	OTTA	2	S/F	1434.0	1435.1	1.5	6.2	4.2		
	2800	OTTA	21	GRF	1740.0	2030.0	250.0	13.2	9.8		
	1415	PALE	4	S/F	1835.5	1835.8	3.1	24.0			
	2800	OTTA	2	S/F	1835.5	1836.0	1.5	3.8	1.4		
	610	SGMR	47	GB	2059.6	2100.0	.5	160.0			
	410	PALE	47	GB	2059.8	2100.1	.5	59.0			
	610	PALE	47	GB	2059.8	2100.1	.5	70.0			
	1415	PALE	47	GB	2059.8	2100.1	.5	53.0			
	2800	OTTA	1	S	2100.0	2100.2	1.2	3.8	1.9		
	3750	TYKW	21	GRF	2358.0	0005.0	70.0	2.0	1.0		
19	208	VORO	44	NS	0000.0E		240.0D		19.0		
	100	HIRA	43	NS	0418.0	0539.0	200.0D	260.0	50.0		MR
	200	GORK	44	NS	0616.0E		344.0D		10.0		
	100	GORK	44	NS	0617.0E		343.0D		25.0		
	204	IZMI	44	NS	0700.0E		240.0D	80.0			
	260	ONDR	44	NS	0804.0E		375.0D	61.0U			
	127	TORN	44	NS	0820.0E	1057.2	390.0D	6600.0	114.0		V1
	430	KRAK	43	NS	1207.6	1345.6	129.0D	160.0			
	245	SGMR	43	NS	1335.0	1752.3	257.3D	110.0			
	245	PALE	43	NS	1735.0	0145.0	490.0D	130.0			
	200	HIRA	44	NS	2146.0E	0053.0	600.0D	40.0	10.0		0
	3750	TYKW	5	S	0040.0	0040.8	10.0	2.0	1.0		
	3750	TYKW	20	GRF	0130.0	0154.0	50.0	3.0	1.0		
	3750	TYKW	21	GRF	0424.0	0444.0	45.0	4.0	2.0		
	2000	TYKW	20	GRF	0425.0	0444.0	40.0	2.0	1.0		
	3750	TYKW	5	S	0433.0	0434.4	3.0	2.0	.7		
	3750	TYKW	5	S	0512.0	0513.0	7.0	2.0	.7		
	3750	TYKW	21	GRF	0512.0	0557.0	130.0U	6.0	3.0		
	9400	TYKW	20	GRF	0525.0	0640.0	140.0U	8.0U	4.0		
	3750	TYKW	5	S	0530.0	0531.0	6.0	2.0	1.0		
	2000	TYKW	20	GRF	0548.0	0600.0	100.0	2.0	1.0		
	430	KRAK	42	SER	0810.2	1016.8	163.0	790.0D			
	430	KRAK			0810.2	1021.1		790.0D			
	1470	POTS	8	S	0851.7	0851.8	.5	21.0			
	9500	POTS	3	S	0928.7	0929.4	1.5	12.0			
	6100	KISV	4	S/F	0928.7	0929.4	2.0	12.0			
	1470	POTS	4	S/F	0928.7	0929.8	1.3	63.0			
	15000	KISV	1	S	0928.8	0929.4	1.0	10.0U			
	2950	GORK	1	S	0928.8	0929.5	2.1	10.0	5.0		
	5200	BERN	3	S	0928.8	0929.6	2.0	18.0			ONLY PAPER REC
	3200	BERN	3	S	0928.8	0929.6	2.0	15.0			ONLY PAPER REC
	3000	POTS	3	S	0928.9	0929.4	1.4	13.0			
	9100	GORK	1	S	0928.9	0929.5	1.9	14.0	7.0		
	810	KRAK	8	S	1016.8	1016.8	.2	370.0			
	810	KRAK	8	S	1021.0	1021.0	.2	90.0			
	930	BORD	8	S	1053.3	1053.5	.2U	16.0	1.0		
	3100	CRIM	1	S	1231.0	1231.5	2.0	11.0	4.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
19	930	BORD	41	F	1411.0	1411.0	.4	284.0	2.0		
	810	KRAK	8	S	1411.0	1411.0	.2	130.0			
	808	ONDR	8	S	1411.8	1411.9	.6	21.0			
	2800	OTTA	22	GRF	1420.0	1530.0	130.0	5.6	2.4		
	8800	SGMR	4	S/F	1439.1	1439.3	2.9	23.0			
	9400	HUAN	22	GRF	1440.8	1537.0	86.2	6.5	2.5		0
	2695	PENT	1	S	2154.0	2155.0	5.0	3.2	1.6		
20	208	VORO	44	NS	0000.0E	0051.0	240.0D	54.0	19.0		
	221	ABST	44	NS	0600.0E	0858.0	180.0D	29.0			
	200	GORK	44	NS	0621.0E		339.0D		15.0		
	204	IZMI	43	NS	0700.0		240.0D	35.0			
	260	ONDR	44	NS	0758.0E		392.0D	20.0U			
	200	HIRA	44	NS	2145.0E	0315.0	600.0D	10.0	5.0		0
	3750	TYKW	5	S	0152.0	0153.9	5.0	2.0	.7		
	3750	TYKW	21	GRF	0315.0	0335.0	90.0	3.5	2.0		
	3750	TYKW	5	S	0321.0	0322.5	8.0	3.0	1.0		
	9400	TYKW	20	GRF	0321.0	0330.0	75.0	7.0	3.0		
	3750	TYKW	20	GRF	0459.0	0506.0	35.0	3.0	1.5		
	3750	TYKW	20	GRF	0550.0	0558.0	45.0	2.0	1.0		
	3750	TYKW	5	S	0654.0	0702.0	20.0	2.0	1.0		
	6100	KISV	27	RF	0859.0	0907.0	25.0	3.0			
	430	KRAK	8	S	0936.5	0936.5	.2	70.0			
	6100	KISV	27	RF	1040.0	1100.0	65.0	6.0			
	2950	GORK	20	GRF	1041.0	1041.1	22.5	5.3			
	9100	GORK	20	GRF	1049.1	1112.7	25.2	6.0			
	6100	KISV	45	C	1049.3	1050.2	1.2	4.0			
	930	BORD	8	S	1055.2	1055.2	.2	24.0	1.0		
	430	KRAK	8	S	1212.6	1212.6	.2	18.0			
	2800	OTTA	240	R	1855.0	1855.0	35.0	6.2			
	9400	TYKW	5	S	2240.3	2240.9	1.5	10.0	3.0		
21	208	VORO	44	NS	0000.0E		180.0D		15.0		
	221	ABST	44	NS	0600.0E	0826.0	180.0D	11.0			
	200	GORK	44	NS	0613.0E		352.0D		5.0		
	260	ONDR	44	NS	0824.0E		358.0D	14.0U			
	245	SGMR	43	NS	1231.0	1601.0	210.0D	96.0			
	127	TORN	44	NS	1300.0E		54.0D		1.0		V1
	3750	TYKW	20	GRF	0040.0	0138.0	100.0	5.0	2.0		
	3750	TYKW	20	GRF	0420.0	0505.0	140.0	4.0	2.0		
	2000	TYKW	20	GRF	0420.0	0505.0	140.0	2.0	1.0		
	6100	KISV	1	S	0659.9	0701.0	2.1U	3.0			
	930	BORD	8	S	0757.8	0757.9	.2	72.0	2.0		
	6100	KISV	4	S/F	0810.6	0820.3	11.0	14.0			
	113	POTS	4	S/F	0812.5	0812.6	.9	1600.0	160.0		III
	9100	GORK	21	GRF	0815.0	0937.5	205.0	13.0			
	3200	BERN	3	S	0817.0	0820.5	6.0	21.0			ONLY PAPER REC
	5200	BERN	3	S	0817.0	0820.5	6.0	28.0			ONLY PAPER REC
	650	GORK	22	GRF	0818.0	0822.9		4.0			
	8800	MANI	3	S	0818.5	0820.5	2.5	15.7	5.2		
	4995	MANI	3	S	0818.7	0820.5	3.3	29.7	9.9		
	9500	POTS	3	S	0819.0	0820.3	2.5	11.0			
	3000	POTS	3	S	0819.0	0820.4	3.0	12.0			
	2695	MANI	3	S	0819.0	0820.5	3.0	11.8	3.9		
	4995	LEAR	4	S/F	0819.1	0820.3	1.2D	23.0			
	9100	GORK	1	S	0819.2	0820.2	1.8	12.0	6.0		
	8800	LEAR	4	S/F	0819.3	0820.3	1.0D	20.0			
	2695	LEAR	4	S/F	0819.3	0820.3	1.0D	18.0			
	930	BORD	8	S	0822.0	0822.8	1.5	17.0	8.0		
	950	GORK	1	S	0822.3	0822.8	1.1	11.0	5.5		
	1415	LEAR	4	S/F	0822.6	0823.1	.5D	10.0			
	930	BORD	41	F	0839.2	0839.5	.4	19.0	1.0		
	113	POTS	4	S/F	1022.2	1022.4	1.9	200.0	30.0		III
	930	BORD	8	S	1116.0	1116.0	.1	36.0	1.0		
	430	KRAK	42	SER	1200.3	1205.4	11.7	67.0			
	2650	DWIN	2	S/F	1205.0	1207.0	5.0	12.0	6.0		
	3000	POTS	42	SER	1206.0	1206.5	6.5	10.0			
	1470	POTS	42	SER	1206.0	1207.0	6.0	10.0			
	930	BORD	41	F	1206.4	1206.8	.8	22.0	2.0		
	810	KRAK	8	S	1206.6	1206.6	.4	34.0			

SOLAR RADIO EMISSION
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JANUARY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
21	808	ONDR	8	S	1217.0	1217.2	1.2	10.0			
	1470	POTS	4	S/F	1240.7	1241.4	1.6	7.0			
	9500	POTS	1	S	1241.0	1242.0	2.0	4.0			
	2800	OTTA	20	GRF	1420.0	1445.0	110.0	3.0	1.5		
	2800	OTTA	27A	RF	1810.0		180.0	2.8	2.6		
	2800	OTTA	24	R	1810.0	1815.0	5.0	2.8	1.4		
	2800	OTTA	24P	R	1815.0		160.0	2.8			
	2695	PENT	20	GRF	1957.0	2000.0	13.0	2.0	1.0		
	2695	PENT	26	FAL	2055.0	2110.0	15.0	-2.8	-1.4		
22	208	VORO	44	NS	0000.0E		240.0D		9.0		
	200	GORK	44	NS	0600.0E		360.0D		5.0		
	260	ONDR	44	NS	0813.0E		369.0D	5.0U			
	9400	TYKW	5	S	0420.2	0420.7	1.0	10.0	2.0		
	2000	TYKW	45	C	0441.0	0443.4	16.0	160.0	35.0		
	1000	TYKW	45	C	0441.0	0443.8	20.0	103.0	18.0		
	3750	TYKW	45	C	0441.0	0444.5	16.0	490.0	140.0		
	1415	MANI	4	S/F	0441.5	0444.5	11.5	58.0	19.3		
	2695	MANI	4	S/F	0441.5	0444.9	14.5	147.7	49.2		
	4995	MANI	47	GB	0441.5	0445.0D	15.5	502.5D	167.5D		
	9400	TYKW	47	GB	0442.0	0444.4	15.0	1180.0	230.0		
	606	MANI	4	S/F	0442.0	0446.5	7.0	27.7	9.2		
	1415	LEAR	47	GB	0442.1	0444.1	2.0D	100.0			
	2695	LEAR	47	GB	0442.3	0444.5	2.2D	180.0			
	4995	LEAR	49	GB	0442.5	0444.3	1.8D	900.0			
	8800	LEAR	49	GB	0442.6	0444.3	1.7D	1300.0			
	500	HIRA	45	C	0442.7	0446.0	7.2	22.0	15.0		0
	15400	LEAR	49	GB	0442.8	0444.3	1.5D	710.0			
	8800	MANI	4	S/F	0442.8	0444.7	14.2	359.5	119.8		
	35000	NAGO	5	S	0443.0	0444.0	6.0	154.0			
	200	HIRA	46	C	0444.6	0445.5	5.9	70.0	10.0		0
	100	HIRA	45	C	0445.1	0445.8	2.0	710.0	150.0		WL
	100	HIRA			0450.1	0450.9		1200.0			WL
	100	HIRA	46	C	0450.1	0452.4	4.0	1600.0	260.0		WL
	200	HIRA	27	RF	0450.7	0454.1	21.0	11.0	3.0		0
	2000	TYKW	29	PBI	0457.0		100.0	2.0	1.0		
	3750	TYKW	29	PBI	0457.0		120.0	10.0	5.0		
	9400	TYKW	29	PBI	0457.0		90.0	22.0	7.0		
	930	BORD	41	F	0822.0	0822.2	.3	20.0	2.0		
	536	ONDR	4	S/F	1330.3	1330.9	1.9	7.0	3.0		
	9400	HUAN	20	GRF	1715.2	1730.4	32.6	5.0	2.5		0
	9400	HUAN	1	S	1824.0	1824.7	1.8	5.8	3.0		R
	2800	OTTA	20	GRF	2000.0	2045.0	90.0	3.8	1.8		
23	208	VORO	44	NS	0000.0E		240.0D		12.0		
	260	ONDR	44	NS	0854.0E		301.0D	4.0U			
	2000	TYKW	20	GRF	0340.0	0450.0	140.0	2.0	1.0		
	3750	TYKW	20	GRF	0340.0	0500.0	160.0	4.0	2.0		
	260	ONDR	42	SER	1212.0	1215.0	11.0	8.0U	3.0		
	430	KRAK	2	S/F	1214.5	1215.0	1.5	30.0	2.0		
	810	KRAK	1	S	1214.7	1214.9	.4	8.0	3.0		
24	208	VORO	44	NS	0000.0E		240.0D		10.0		
	260	ONDR	44	NS	0822.0E		337.0D	4.0U			
	9400	TYKW	5	S	0046.0	0046.6	4.0	4.0	1.5		
	2930	VORO	3	S	0150.0	0155.0	15.0	168.0			
	3750	TYKW	5	S	0151.0	0155.9	19.0	150.0	30.0		
	2000	TYKW	28	PRE	0152.0	0153.2	2.0	7.0	3.0		
	1415	LEAR	4	S/F	0152.1	0155.8	8.0	41.0			
	2695	LEAR	47	GB	0152.1	0155.8	10.0	139.0			
	4995	LEAR	47	GB	0152.1	0155.8	10.4	110.0			
	8800	LEAR	47	GB	0152.6	0155.8	8.4	54.0			
	9400	TYKW	45	C	0153.0	0156.0	7.0	50.0	20.0		
	2695	MANI	3	S	0153.5	0156.3	10.5	134.6	44.9		
	4995	MANI	3	S	0153.5	0156.3	9.5	164.5	54.8		
	1415	MANI	3	S	0153.5	0156.9	10.0	35.7	11.9		
	8800	PALE	47	GB	0153.8	0155.8	14.0	69.0			
	1415	PALE	4	S/F	0153.8	0155.8	4.5	38.0			
	8800	MANI	3	S	0153.9	0156.4	6.1	92.0	30.7		
	2000	TYKW	5	S	0154.0	0155.9	13.0	100.0	23.0		

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
24	1000	TYKW	5	S	0154.0	0156.1	10.0	8.0	2.5		
	15400	LEAR	4	S/F	0154.1	0156.0	6.0	20.0			
	2695	PALE	47	GB	0154.3	0155.8	7.2	139.0			
	9400	TYKW	29	PBI	0200.0		130.0	15.0	7.0		
	2000	TYKW	30	PBI	0207.0		120.0	4.0	2.0		
	3750	TYKW	30	PBI	0210.0		115.0	6.0	3.0		
	2000	TYKW	20	GRF	0213.0	0223.0	80.0	2.0	1.0		
	3750	TYKW	20	GRF	0213.0	0233.0	90.0	3.0	1.5		
	430	KRAK	8	S	1015.2	1015.3	.2	27.0			
	127	TORN	41	F	1020.8	1022.8	7.5	10.0	1.0		
	204	IZMI	41	F	1029.8	1031.8	5.2	30.0			
	127	TORN	45	C	1030.8	1033.3	6.0	580.0	90.0		
	113	POTS	4	S/F	1031.8	1033.9	4.9	100.0	2.0		III
	2950	GORK	20	GRF	1033.7	1040.3	60.0D	14.0			
	950	GORK	21	GRF	1033.8	1043.7	16.8	5.5	2.5		
	33	UPIC	8	S	1034.5	1034.5	.2				
	29	UPIC	8	S	1034.5	1034.6	.3				
	950	GORK	2	S/F	1039.0	1040.2	4.6	29.0			
	808	ONDR	40	F	1039.0	1040.5	5.0	10.0	12.0		
	1470	POTS	4	S/F	1039.0	1040.5	4.5U	132.0U			
	930	BORD	46	C	1039.0	1041.0	5.0	48.0	5.0		
	810	KRAK	4	S/F	1039.2	1040.7	6.6	17.0	7.0		
	2650	DWIN	41	F	1040.0	1040.0	5.0	40.0	15.0		
	430	KRAK	8	S	1042.2	1042.2	.2	18.0			
	430	KRAK	8	S	1055.8	1055.9	.2	15.0			
	430	KRAK	1	S	1117.3	1117.3	.3	9.0			
	4995	SGMR	4	S/F	1449.3	1450.0	2.3	21.0			
	9400	HUAN	4	S/F	1449.4	1450.3	2.2	38.9	18.9		0
	8800	SGMR	4	S/F	1449.5	1450.1	2.3	46.0			
	2800	OTTA	22	GRF	1450.0	1455.0	15.0	3.4	1.7		
	9400	HUAN	29	PBI	1451.6	1451.6	17.1	8.4	4.5		0
	2800	OTTA	1	S	1528.4	1529.0	2.0	2.2	1.1		
	9400	HUAN	21	GRF	1811.1	2009.0	237.5	33.8	10.8		0
	2800	OTTA	23	GRF	1915.0	2000.0	220.0D	24.0			
	9400	HUAN	41	F	1938.0	1939.0	9.0	23.7	18.7		0
	9400	HUAN			1938.0	1941.8		40.6			0
	9400	HUAN			1938.0	1945.0		38.9			0
	2800	OTTA	8	S	1938.8	1938.9	.5	3.6	1.8		
	2800	OTTA	1	S	1941.0	1942.0	1.5	3.4	1.7		
	2800	OTTA	3	S	1944.0	1945.0	6.0	13.8	6.6		
25	6100	KISV	1	S	0851.0	0855.7	6.0	3.0			
	430	KRAK	42	SER	1010.9	1011.0	6.1	17.0			
	430	KRAK			1010.9	1016.5		15.0			
	3100	CRIM	24	R	1043.0	1125.0		6.0			
	2950	GORK	20	GRF	1047.0	1130.0	75.0D	5.2			
	9100	GORK	20	GRF	1120.3	1122.3	42.0	9.0			
	430	KRAK	8	S	1127.4	1127.4	.1	26.0			
	260	ONDR	8	S	1128.2	1128.2	.2	5.0			
	430	KRAK	8	S	1240.4	1240.5	.2	47.0			
	260	ONDR	8	S	1254.0	1254.3	.9	12.0			
	113	POTS	4	S/F	1336.8	1337.1	.8	200.0	20.0		III
	9400	HUAN	20	GRF	1432.5	1526.7	80.8	13.1	4.8		0
	930	BORD	8	S	1444.0	1444.0	.1	53.0	1.0		
	2800	OTTA	20	GRF	1445.0	1530.0	250.0	5.6	2.8		
	930	BORD	8	S	1506.8	1506.8	.1	21.0	1.0		
	9400	HUAN	20	GRF	1611.3	1645.6	111.6	14.7	6.0		L
	15400	PALE	8	S	1759.8	1800.1	1.0	36.0			
	410	PALE	47	GB	1820.8	1821.1	.5	430.0			
	15400	SGMR	4	S/F	1918.3	1919.5	2.3	27.0			
	9400	HUAN	3	S	1918.7	1919.8	3.2	26.5	10.5		R
	8800	SGMR	8	S	1919.3	1919.5	.3	16.0			
	4995	SGMR	8	S	1919.6	1919.6	.2	11.0			
	2800	OTTA	20	GRF	2046.0	2053.0	26.0	3.2	1.2		
26	2000	TYKW	21	GRF	0205.0	0240.0	195.0	5.0	2.5		
	1000	TYKW	5	S	0210.0	0212.5	5.0	3.0	1.0		
	8800	LEAR	20	GRF	0210.0	0219.8	21.6	13.0			
	3750	TYKW	20	GRF	0210.0	0227.0	200.0	10.0	5.0		
	1000	TYKW	21	GRF	0210.0	0240.0	140.0	2.0	1.0		

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26	15400	LEAR	20	GRF	0210.5	0220.8	21.1	11.0			
	1415	LEAR	20	GRF	0210.8	0220.1	20.8	05.0			
	4995	LEAR	20	GRF	0210.8	0220.8	20.8	10.0			
	2000	TYKW	5	S	0211.0	0212.3	3.0	5.0	1.5		
	9400	TYKW	20	GRF	0211.0	0230.0	195.0	11.0	5.0		
	2695	LEAR	20	GRF	0211.8	0220.8	19.8	08.0			
	4995	LEAR	20	GRF	0235.6	0235.6	11.5	08.0			
	8800	LEAR	20	GRF	0235.6	0236.1	14.4	10.0			
	2695	LEAR	20	GRF	0235.6	0236.3	9.4	09.0			
	1415	LEAR	20	GRF	0235.6	0236.6	2.0	06.0			
	2000	TYKW	5	S	0328.0	0329.9	4.0	3.0	1.5		
	1000	TYKW	5	S	0328.0	0330.0	5.0	2.0	1.0		
	2000	TYKW	29	PBI	0332.0		20.0	1.0	.5		
	3750	TYKW	5	S	0535.0	0535.2	2.0	3.0	.7		
	2000	TYKW	5	S	0535.0	0535.2	3.0	3.0	1.0		
	3750	TYKW	5	S	0632.0	0633.0	3.0	2.0	.7		
	6100	KISV	1	S	0753.3	0754.7	2.0	3.0			
	3100	CRIM	24	R	0928.5	1020.0		6.0			
	430	KRAK	42	SER	0932.8	1002.7	30.0	50.0			
	204	IZMI	41	F	0944.0	0944.0	1.0	71.0			
	260	ONDR	46	C	0944.0	0944.3	1.7	16.0	4.0		
	2950	GORK	20	GRF	0947.5	1000.0	97.0	5.0	2.5		
	9100	GORK	20	GRF	0954.0	1029.5	50.0D	8.0			
	260	ONDR	4	S/F	0954.2	0954.9	1.4	4.0	2.0		
	410	LEAR	8	S	1002.6	1002.8	.2	26.0			
	260	ONDR	4	S/F	1004.3	1004.9	1.3	7.0	13.0		
	204	IZMI	41	F	1006.3	1006.8	.8	74.0			
	260	ONDR	4	S/F	1006.3	1007.2	.9U	27.0	76.0		
	204	IZMI	41	F	1045.8	1046.2	1.1	32.0			
	260	ONDR	42	SER	1045.9	1047.6	4.0	66.0	2.0		
	113	POTS	4	S/F	1046.2	1046.2	.2	200.0	70.0		III
	430	KRAK	8	S	1133.6	1133.6	.2	22.0			
	2650	DWIN	1	S	1224.0	1225.0	3.0	10.0	5.0		
	29	UPIC	4	S/F	1232.1	1232.2	1.8				
	33	UPIC	4	S/F	1232.2	1232.3	2.7				
	260	ONDR	8	S	1357.0	1357.2	.1	6.0			
	9400	HUAN	20	GRF	1516.4	1543.2	67.7	5.0	1.2		0
	2800	OTTA	20	GRF	1525.0		155.0	3.8	2.4		
27	260	ONDR	44	NS	0810.0E	1230.0U	367.0D	6.0U			
	3750	TYKW	5	S	0453.0	0455.2	4.0	5.0	2.0		
	3750	TYKW	29	PBI	0457.0		35.0	2.0	1.0		
	610	LEAR	8	S	0533.3	0533.5	.5	11.0			
	3750	TYKW	5	S	0605.0	0606.3	5.0	1.5	.7		
	610	LEAR	47	GB	0639.1	0639.6	2.0	84.0			
	410	LEAR	8	S	0640.6	0641.0	1.0	19.0			
	3100	CRIM	24	R	0709.8	0800.0		8.0			
	430	KRAK	8	S	0826.9	0827.0	.2	29.0			
	6100	KISV	1	S	1137.0	1137.9	2.0	3.0			
	536	ONDR	4	S/F	1232.1	1232.9	1.0	13.0	6.0		
	430	KRAK	8	S	1232.5	1233.1	.8	170.0			
	536	ONDR	8	S	1320.8	1320.8	.1	7.0			
	2800	OTTA	20	GRF	1355.0	1430.0	65.0	3.8	1.9		
	2800	OTTA	240	R	1615.0	1650.0	35.0	3.8	1.9		
	2800	OTTA	8	S	1744.0	1744.1	.5	2.6			
	2695	PENT	240	R	1750.0	1800.0	10.0	3.0	1.5		
	9400	HUAN	21	GRF	1951.8	2119.6	129.6	17.3	8.0		L
	2695	PENT	240	AR	2111.0	2115.0	4.0	3.8			
	2695	PENT	2	S/F	2113.0	2114.0	2.5	9.4	4.4		
	9400	HUAN	2	S/F	2113.1	2114.0	4.5	18.9	8.8		L
	2695	PENT	240	AR	2209.0	2213.0	4.0	3.8	1.9		
	2695	PENT	8	S	2209.9	2210.0	.7	6.0	3.0		
	9400	TYKW	21	GRF	2240.0	2252.0	30.0	5.0	2.5		
	3750	TYKW	21	GRF	2245.0	2252.0	30.0	4.0	2.0		
	200	HIRA	46	C	2251.7	2253.8	3.0	150.0	32.0		0
	100	HIRA	46	C	2252.6	2253.4	3.5	9500.0	470.0		0
	500	HIRA	46	C	2252.7	2253.0	1.8	90.0	30.0		SR
	1415	LEAR	47	GB	2253.0	2253.5	2.0	78.0			
	2695	LEAR	8	S	2253.0	2253.6	1.8	48.0			
	2000	TYKW	45	C	2253.0	2253.7	2.5	75.0	22.0		

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27	3750	TYKW	45	C	2253.0	2253.7	2.5	44.0	13.0		
	9400	TYKW	5	S	2253.0	2253.7	2.5	41.0	12.0		
	15400	LEAR	8	S	2253.0	2253.8	1.3	13.0			
	2695	PENT	4	S/F	2253.0	2253.8	2.0	38.0	22.0		
	1000	TYKW	45	C	2253.0	2254.2	2.5	247.0	25.0		
	4995	MANI	3	S	2253.0	2254.2	2.0	58.0	19.3		
	606	MANI	4	S/F	2253.0	2254.2	2.0	40.6	13.5		
	610	LEAR	47	GB	2253.0	2254.5	1.6	64.0			
	410	LEAR	8	S	2253.1	2253.6	1.5	37.0			
	8800	LEAR	47	GB	2253.1	2253.6	1.7	51.0			
	4995	LEAR	47	GB	2253.1	2253.6	1.7	60.0			
	8800	MANI	3	S	2253.2	2254.0	2.1	60.6	20.2		
	1415	MANI	4	S/F	2253.2	2254.3	1.8	50.4	16.8		
	2695	MANI	3	S	2253.2	2254.4	2.3	47.5	15.8		
	1000	TYKW	45	C	2310.9	2311.1	.6	23.0	5.0		
	1000	TYKW	8	S	2315.7	2315.8	.3	10.0	2.0		
	1000	TYKW	5	S	2336.0	2336.3	.7	15.0	6.0		
28	221	ABST	44	NS	0600.0E	0752.2	180.00	15.0			
	200	GORK	44	NS	0630.0E		266.00		15.0		
	234	POTS	44	NS	0700.0E	0722.0	185.00	250.0			
	113	POTS	44	NS	0700.0E	0800.0	161.00	250.0			
	127	TORN	43	NS	0703.0	1233.5	480.0	60.0	4.0		V1
	100	GORK	43	NS	0729.0		163.0		450.0		
	204	IZMI	44	NS	0805.0E		175.00	20.0			
	260	ONDR	44	NS	0810.0E		380.00				
	200	HIRA	44	NS	2142.0E	0643.0	620.00	35.0	15.0		MR
	3750	TYKW	5	S	0027.0	0032.5	25.0	4.0	1.5		
	200	HIRA	41	F	0108.1	0108.9	1.1	45.0			O
	500	HIRA	46	C	0108.2	0108.7	1.0	35.0	13.0		WR
	100	HIRA	41	F	0108.3	0109.0	1.3	2700.0			WL
	1000	TYKW	45	C	0108.3	0109.0	1.5	65.0	6.0		
	200	HIRA	41	F	0249.3	0250.9	3.3	140.0			WR
	100	HIRA	41	F	0249.5	0251.0	3.0	560.0			WL
	3750	TYKW	21	GRF	0257.0	0308.0	125.0	8.0	3.5		
	2000	TYKW	21	GRF	0300.0	0312.0	70.0	2.5	1.0		
	9400	TYKW	20	GRF	0303.0	0309.0	30.0	6.0	3.0		
	3750	TYKW	5	S	0305.0	0306.0	1.5	2.0	.5		
	200	HIRA	42	SER	0325.7	0326.1	6.2	350.0			WR
	500	HIRA	46	C	0326.0	0326.3	1.5	250.0	40.0		MR
	3750	TYKW	5	S	0326.0	0326.7	2.0	4.0	1.0		
	100	HIRA	42	SER	0326.0	0326.7	6.5	1100.0			WL
	2000	TYKW	5	S	0326.0	0326.7	1.0	3.0	1.0		
	1000	TYKW	45	C	0326.3	0326.7	2.0	7.0	1.5		
	2000	TYKW	5	S	0331.3	0331.8	1.0	4.0	1.0		
	1000	TYKW	5	S	0331.3	0331.8	1.0	14.0	3.0		
	2000	TYKW	20	GRF	0430.0	0450.0	40.0	2.0	1.0		
	9400	TYKW	20	GRF	0444.0	0450.0	30.0	4.0	2.0		
	3750	TYKW	21	GRF	0520.0	0528.0	38.0	5.0	2.0		
	200	HIRA	46	C	0523.8	0524.1	2.1	1800.0	250.0		O
	500	HIRA	45	C	0525.0	0525.1	.2	12.0	4.0		SR
	100	HIRA	48	C	0525.0	0525.4	.4	10000.00	1250.00		
	9400	TYKW	5	S	0525.0	0525.6	2.5	8.0	2.0		
	3750	TYKW	5	S	0525.0	0525.7	1.5	10.0	3.0		
	9400	TYKW	21	GRF	0525.0	0538.0	30.0	6.0	2.0		
	2000	TYKW	21	GRF	0525.0	0540.0	30.0	2.0	1.0		
	2000	TYKW	5	S	0525.3	0525.7	2.0	6.0	2.0		
	1000	TYKW	45	C	0525.3	0525.7	2.0	15.0	5.0		
	3750	TYKW	45	C	0532.5	0533.6	1.5	4.0	1.0		
	9400	TYKW	45	C	0532.5	0533.6	1.5	5.0	2.0		
	3750	TYKW	28	PRE	0635.0	0649.2	23.0	12.0	5.0		
	9400	TYKW	28	PRE	0635.0	0653.6	23.0	33.0	13.0		
	9100	GORK	47	GB	0636.7	0707.7	87.0	210.0			
	9100	GORK			0636.7	0714.9		500.0			
	9100	GORK			0636.7	0722.2		1125.0			
	2950	GORK	47	GB	0637.4E	0702.1	120.00	120.0			
	2950	GORK			0637.4E	0707.7		285.0			
	2950	GORK			0637.4E	0709.8		254.0			
	2950	GORK			0637.4E	0715.0		375.0			
	2950	GORK			0637.4E	0721.2		230.0			

SOLAR RADIO EMISSION
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JANUARY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
28	2950	GORK			0637.4E	0722.5		510.0			
	2000	TYKW	28	PRE	0641.0	0642.5	17.0	25.0	6.0		
	6100	KISV			0641.0	0709.6		213.0			
	6100	KISV			0641.0	0714.7		306.0			
	6100	KISV	47	GB	0641.0	0722.0	105.0	505.0			
	1000	TYKW	45	C	0642.0	0642.5	1.0	12.0	2.5		
	3100	CRIM	28	PRE	0642.5	0658.5	16.0	10.0	3.0		
	15000	KISV			0644.0	0700.1		98.0			
	15000	KISV			0644.0	0709.8		162.0			
	15000	KISV			0644.0	0714.7		230.0			
	15000	KISV	47	GB	0644.0	0722.2	100.0	865.0			
	950	GORK	47	GB	0649.8E	0712.4	155.0D	259.0			
	950	GORK			0649.8	0722.2		290.0			
	500	HIRA	48	C	0657.5	0706.3	55.0D	1000.0	250.0		WLMR
	200	HIRA	48	C	0657.8	0713.7	60.0D	2000.0	330.0U		WL,SUNSET
	200	HIRA			0657.8	0740.0		900.0U			MR
	1000	TYKW	45	C	0658.0	0712.2	32.0	360.0	65.0		
	3000	IZMI			0658.0	0714.8		338.0			
	1415	MANI	4	S/F	0658.0	0722.0	41.0	186.2	62.1		
	9400	TYKW	47	GB	0658.0	0722.1	32.0	1080.0	170.0		
	3750	TYKW	47	GB	0658.0	0722.2	32.0	645.0	165.0		
	3000	IZMI	45	C	0658.0	0722.4	36.5	466.0	194.0		
	2000	TYKW	45	C	0658.0	0722.8	32.0	350.0	100.0		
	3100	CRIM	45	C	0658.5	0710.0	33.0	263.0	179.0		
	3100	CRIM			0658.5	0714.6		394.0			
	3100	CRIM			0658.5	0722.0		537.0			
	2695	MANI	4	S/F	0658.5	0722.7	41.0	437.1	145.7		
	606	MANI	47	GB	0659.0	0708.0	39.0	2353.5	784.5		
	8800	MANI	47	GB	0659.0	0722.2	38.0	1470.1	490.0		
	650	GORK	23	GRF	0659.0	0751.5	121.0	16.0			
	4995	MANI	47	GB	0659.2	0722.2	38.8	1164.1	388.0		
	100	GORK	46	C	0703.5	0705.1	25.0	24700.0			
	100	GORK			0703.5	0707.7		31300.0			
	200	GORK	46	C	0703.5	0711.2	22.5	1400.0			
	200	GORK			0703.5	0715.5		4600.0			
	100	GORK			0703.5	0721.0		3200.0			
	200	GORK			0703.5	0723.7		1300.0			
	100	HIRA			0703.7	0704.7		5500.0			WR
	100	HIRA	48	C	0703.7	0727.2	56.0	6000.0	524.0		WL,SUNSET
	650	GORK	46	C	0704.4	0707.7	33.8	2000.0			
	204	IZMI	46	C	0704.5	0715.0	23.5	800.0	250.0		
	204	IZMI			0704.5	0723.8		320.0			
	127	TORN	27	RF	0715.0	0752.8	94.0	8300.0	290.0		
	9500	POTS	4	S/F	0720.0	0722.2	9.0	530.0			
	3000	POTS	4	S/F	0720.0E	0722.7	10.0D	290.0U			
	1470	POTS	4	S/F	0720.0E	0723.5	7.0D	120.0U			
	204	IZMI	30	PBI	0728.0	0738.6	37.0	52.0	130.0		
	2000	TYKW	30	PBI	0730.0		20.0D	17.0	10.0D		
	3750	TYKW	30	PBI	0730.0		20.0D	45.0	30.0D		
	9400	TYKW	30	PBI	0730.0		20.0D	90.0	64.0D		
	1000	TYKW	30	PBI	0730.0		7.0D	36.0	34.0D		
	3100	CRIM	3	S	0732.8	0735.0	5.0	54.0	18.0		
	2000	TYKW	5	S	0733.0	0735.9	7.0	62.0	25.0		
	9400	TYKW	5	S	0733.5	0734.3	2.5	20.0	7.0		
	3750	TYKW	5	S	0733.5	0734.5	6.0	42.0	20.0		
	1000	TYKW	5	S	0733.5	0735.0	3.5D	25.0	13.0D		
	3100	CRIM	29	PBI	0737.8	0738.0	47.0	45.0	16.0		
	930	BORD	41	F	0822.1	0822.3	.4	388.0	2.0		
	9100	GORK	20	GRF	0841.1	1114.0	169.0D	35.0			
	2950	GORK	21	GRF	0854.0	1106.0	156.0D	36.0			
	950	GORK	21	GRF	0907.3	1030.0	143.0D	10.0			
	930	BORD	41	F	0912.4	0912.7	5.6	53.0	2.0		
	430	KRAK	42	SER	0934.7	0935.0	18.0	32.0			
	3000	POTS	3	S	0937.5	0938.4	4.5	7.0			
	1470	POTS	1	S	0937.5	0939.0	2.5	3.0			
	808	ONDR	40	F	0937.8	0939.6	5.6	48.0	10.0		
	2650	DWIN	1	S	0938.0	0938.0	2.0	10.0	5.0		
	930	BORD	41	F	0938.0	0939.3	6.0	357.0	6.0		
	950	GORK	4	S/F	0938.4	0940.0	4.4	166.0			
	810	KRAK	45	C	0938.5	0942.3	4.3	70.0	4.0		

SOLAR RADIO EMISSION
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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
28	536	ONDR	40	F	0938.6	0940.7	4.4	8.0	4.0		
	810	KRAK	2	S/F	1032.1	1032.6	1.5	17.0	4.0		
	33	UPIC	42	SER	1032.2	1032.8	78.2				
	930	BORD	41	F	1032.3	1032.3	.4	22.0	2.0		
	113	POTS	4	S/F	1032.4	1032.4	.9	100.0	10.0		
	29	UPIC	42	SER	1032.4	1033.0	57.5U				
	430	KRAK	8	S	1032.6	1032.6	.2	28.0			
	930	BORD	8	S	1037.2	1037.2	.2	31.0	1.0		
	810	KRAK	8	S	1057.2	1057.2	.1	12.0			
	536	ONDR	8	S	1104.6	1104.7	.2	9.0			
	930	BORD	41	F	1112.8	1113.3	2.6	173.0	5.0		
	810	KRAK	7	C	1112.9	1113.9	3.6	75.0	8.0		
	3100	CRIM	3	S	1113.0	1113.2	2.0	82.0	27.0		
	3200	BERN	4	S/F	1113.0	1113.4	4.0	95.0			
	3000	POTS	4	S/F	1113.0	1113.5	2.0	75.0			
	6100	KISV	4	S/F	1113.0	1113.5	1.5	12.0			
	1470	POTS	1	S	1113.0	1113.5	2.0	3.0			
	808	ONDR	40	F	1113.0	1113.9	5.0	28.0	4.0		
	9500	POTS	1	S	1113.0	1114.0	2.0	9.0			
	2650	DWIN	45	C	1113.0	1131.0	1.8U	130.0	60.0		
	2950	GORK	4	S/F	1113.2	1113.5	2.0	82.0			
	536	ONDR	8	S	1113.6	1113.7	.1	8.0			
	430	KRAK	42	SER	1116.7	1116.8	34.0	28.0			
	430	KRAK			1116.7	1140.9		25.0			
	930	BORD	41	F	1157.7	1158.0	.5	23.0	2.0		
	930	BORD	41	F	1228.7	1228.7	.3	22.0	2.0		
	430	KRAK	8	S	1241.6	1241.6	.2	21.0			
	930	BORD	41	F	1257.4	1257.4	.4	90.0	2.0		
	930	BORD	41	F	1304.7	1305.4	2.3	33.0	2.0		
	113	POTS	42	SER	1305.3	1309.7	4.8	700.0	15.0		III
	1470	POTS	1	S	1321.0	1321.4	1.0	3.0			
	536	ONDR	8	S	1321.4	1321.6	.3	16.0			
	9400	HUAN	20	GRF	1339.3	1437.5	116.8	21.2	11.1		R
	2800	OTTA	240	AR	1353.0	1500.0	67.0	19.2			
	536	ONDR	8	S	1409.3	1409.5	.2	8.0			
	2800	OTTA	20	GRF	1422.0	1440.0	30.0	5.8	2.9		
	2650	DWIN	4	S/F	1423.0	1423.0	1.0	120.0	60.0		
	536	ONDR	8	S	1424.3	1424.3	.1	18.0			
	930	BORD	8	S	1426.0	1426.0	.1	26.0	1.0		
	2650	DWIN	1	S	1510.0	1510.0	1.0	40.0	20.0		
	2800	OTTA	20	GRF	1510.0	1520.0	20.0	3.8	2.6		
	2800	OTTA	240	R	1635.0	1655.0	20.0	3.8	1.9		
	2800	OTTA	20	GRF	1930.0	1945.0	110.0	4.4			
	9400	HUAN	20	GRF	1942.4	2000.0	37.6	4.9	2.4		R
	3750	TYKW	20	GRF	2340.0	0020.0	125.0	12.0	5.0		
29	208	VORO	44	NS	0000.0E		230.0D		20.0		
	200	GORK	44	NS	0616.0E		345.0D		40.0		
	100	GORK	44	NS	0616.0E		314.0D		5.0		
	204	IZMI	44	NS	0700.0E		240.0D	100.0			
	127	TORN	43	NS	0715.0	1330.3	465.0	350.0	9.0		V2
	536	ONDR	44	NS	0800.0E		110.0D				
	260	ONDR	44	NS	0800.0E		390.0D				
	536	ONDR	43	NS	1250.0		100.0D				
	100	HIRA	44	NS	2142.0E	0516.0	560.0D	1300.0	270.0		SR
	200	HIRA	44	NS	2142.0E	0619.0	620.0D	630.0	325.0		SR
	1000	TYKW	8	S	0206.9	0207.0	.4	26.0	6.0		
	3750	TYKW	21	GRF	0210.0	0309.0	195.0	11.0	6.0		
	1000	TYKW	21	GRF	0215.0	0237.0	170.0	5.0	2.0		
	2000	TYKW	21	GRF	0215.0	0312.0	205.0	10.0	5.0		
	9400	TYKW	45	C	0220.0	0241.0	30.0	20.0	12.0		
	3750	TYKW	45	C	0221.0	0223.0	4.0	5.0	2.0		
	2000	TYKW	42	SER	0222.0	0223.3	2.0	10.0	2.0		
	1000	TYKW	42	SER	0222.5	0222.8	.8	25.0	5.0		
	3750	TYKW	45	C	0234.0	0235.6	12.0	17.0	4.0		
	2000	TYKW	5	S	0235.0	0235.7	4.0	6.0	2.5		
	2000	TYKW	45	C	0240.0	0242.5	4.0	5.0	2.0		
	9400	TYKW	30	PBI	0250.0		105.0	12.0	6.0		
	4995	MANI	3	S	0312.4	0313.9	2.6	78.3	26.1		
	3750	TYKW	5	S	0312.5U	0313.3	2.5U	31.0	10.0U		

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
29	9400	TYKW	5	S	0312.5	0313.3	1.5	17.0	6.0		
	2000	TYKW	5	S	0312.5	0313.4	2.5	23.0	9.0		
	2695	MANI	3	S	0312.5	0313.8	2.9	31.0	10.3		
	1000	TYKW	45	C	0312.8	0313.2	2.0	32.0	6.0		
	1415	MANI	3	S	0312.9	0314.0	2.3	13.4	4.5		
	9400	TYKW	29	PBI	0314.0		20.0U	6.0	2.0U		
	3750	TYKW	29	PBI	0315.0		16.0	6.0	3.0		
	2000	TYKW	29	PBI	0315.0		12.0	2.0	1.0		
	3750	TYKW	21	GRF	0340.0	0400.0	50.0	6.0	2.5		
	9400	TYKW	21	GRF	0345.0	0356.0	45.0	8.0	4.0		
	2000	TYKW	21	GRF	0352.0	0410.0	80.0	2.0	1.0		
	3750	TYKW	45	C	0353.0	0355.7	6.0	10.0	4.0		
	2000	TYKW	45	C	0354.3	0355.2	3.0	10.0	2.5		
	9400	TYKW	5	S	0358.0	0358.2	.6	5.0	1.5		
	9400	TYKW	5	S	0427.0	0427.5	2.0	7.0	2.0		
	650	GORK	22	GRF	0557.0E	0806.6	339.0D	27.0			
	9100	GORK	20	GRF	0606.9	1050.0	353.0D	55.0			
	2950	GORK	21	GRF	0621.0	1045.0	339.0	42.0			
	650	GORK	45	C	0648.0	0700.6	30.0	43.0			
	650	GORK			0648.0	0714.4		44.0			
	2950	GORK	1	S	0726.8	0727.0	.9	4.0			
	930	BORD	41	F	0757.5	0757.6	.4	495.0	2.0		
	930	BORD	8	S	0818.2	0818.6	.5	150.0	3.0		
	6100	KISV	21	GRF	0830.0	0847.7	35.0	14.0			
	930	BORD	8	S	0837.2	0837.2	.1	23.0	1.0		
	810	KRAK	5	S	0838.6	0844.8	8.1	13.0	5.0		
	430	KRAK	5	S	0839.2	0844.8	11.2	28.0	14.0		
	15000	KISV	20	GRF	0858.5	0901.0	11.0	12.0			
	810	KRAK	5	S	0913.4	0916.7	10.0	8.0	3.0		
	430	KRAK	27	RF	0913.7	0915.7	35.5	100.0	15.0		
	430	KRAK	27	RF	0953.3	1107.6	154.0	52.0	30.0		
	930	BORD	41	F	1001.7	1001.7	.3	34.0	2.0		
	6100	KISV	21	GRF	1020.0	1048.5	75.0	21.0			
	3100	CRIM	20	GRF	1034.0	1044.5	46.0	19.0	6.0		
	3000	POTS	20	GRF	1038.0	1044.0	52.0	20.0			
	2650	DWIN	2	S/F	1040.0	1044.0	10.0	20.0	10.0		
	9500	POTS	20	GRF	1040.0	1053.0	45.0	18.0			
	1470	POTS	2	S/F	1048.0	1049.0	2.0	5.0			
	810	KRAK	2	S/F	1048.3	1049.5	2.5	27.0	2.0		
	100	GORK	45	C	1050.5	1050.6	.9	270.0			
	100	GORK			1050.5	1050.9		150.0			
	6100	KISV	1	S	1108.8	1109.7	1.5	4.0			
	6100	KISV	20	GRF	1145.5	1147.5	4.0	5.0			
	6100	KISV	1	S	1154.3	1154.6	.7	4.0			
	430	KRAK	8	S	1236.9	1237.0	.2	58.0			
	430	KRAK	48	C	1256.2	1312.9	43.0	228.0	30.0		
	810	KRAK	27	RF	1256.3	1307.2	28.0	29.0	12.0		
	808	ONDR	20	GRF	1305.0	1308.7	21.2	12.0	10.0		
	9400	HUAN	22	GRF	1350.8	1413.4	58.1	4.9	2.1		0
	930	BORD	8	S	1354.0	1354.0	.1	44.0	1.0		
	2800	OTTA	240	R	1400.0	1425.0	25.0	8.8			
	2800	OTTA	1	S	1502.0	1503.7	8.0	5.2	2.4		
	2800	OTTA	1	S	1539.0	1540.6	3.0	5.6	2.8		
	9400	HUAN	20	GRF	1616.8	1638.4	46.4	3.3	2.9		0
	2800	OTTA	20	GRF	1730.0	1745.0	65.0	10.4	5.0		
	9400	HUAN	20	GRF	1734.0	1801.6	70.0	13.1	6.5		R
	9400	HUAN	20	GRF	1940.1	2003.7	39.6	4.9	3.1		0
	2695	PENT	240	R	2100.0	2112.0	12.0	4.4	2.2		
	2695	PENT	1	S	2125.0	2125.8	1.8	8.8	4.4		
	2695	PENT	1	S	2131.0	2132.0	3.0	4.8	2.0		
	2695	PENT	45	C	2148.0	2153.0	6.0	12.0	4.6		
	3750	TYKW	21	GRF	2330.0	0020.0	180.0	19.0	10.0		
	1000	TYKW	45	C	2341.0	0003.5	38.0	11.0	3.0		
	9400	TYKW	21	GRF	2356.0	0003.0	140.0	10.0	5.0		
30	208	VORO	44	NS	0000.0E		240.0D		170.0D		
	221	ABST	44	NS	0600.0E	0814.2	180.0D	15.0			
	200	GORK	44	NS	0601.0E		329.0D		240.0		
	100	GORK	44	NS	0603.0E		327.0D		20.0		
	204	IZMI	44	NS	0700.0E		300.0D	70.0			

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
30	127	TORN	44	NS	0700.0E	1207.0	480.0D	3600.0	250.0		V1
	260	ONDR	44	NS	0726.0E	1211.0	390.0D	24.0U			
	536	ONDR	44	NS	0726.0E	1215.0U	390.0D	78.0U			
	430	KRAK	44	NS	0800.0E	0834.4	152.0D	250.0	19.0		
	430	KRAK	43	NS	1114.2	1214.4	83.0D	210.0			
	100	HIRA	44	NS	2140.0E	0120.0	620.0D	6000.0	1850.0		SR
	200	HIRA	44	NS	2140.0E	2344.0	620.0D	420.0	220.0		MR
	2000	TYKW	21	GRF	0000.0	0030.0	150.0	8.0	4.0		
	1000	TYKW	5	S	0021.0	0023.0	5.0	5.0	1.5		
	9400	TYKW	5	S	0024.0	0025.5	3.0	3.0	1.0		
	3750	TYKW	45	C	0024.0	0031.6	16.0	12.0	6.0		
	9400	TYKW	21	GRF	0024.0	0036.0	45.0	14.0	5.0		
	1000	TYKW	45	C	0027.5	0030.1	5.5	5.0	1.5		
	9400	TYKW	45	C	0031.0	0032.3	2.0	5.0	2.0		
	3750	TYKW	30	PBI	0040.0		30.0	4.0	2.0		
	2930	VORO	3	S	0044.0	0045.0	4.0	30.0			
	9400	TYKW	45	C	0045.0	0046.4	3.0	51.0	15.0		
	1000	TYKW			0045.0	0123.4		46.0			
	1000	TYKW	41	F	0045.0	0251.7	255.0	52.0	15.0		
	3750	TYKW	5	S	0045.5	0046.4	3.5	34.0	12.0		
	2000	TYKW	5	S	0045.5	0046.8	8.0	21.0	6.0		
	9400	TYKW	29	PBI	0048.0		8.0	6.0	3.0		
	3750	TYKW	29	PBI	0049.0		10.0	4.0	2.0		
	500	HIRA	24	R	0057.0	0152.0	420.0D	60.0	10.0		MR
	3750	TYKW	21	GRF	0115.0	0130.0	70.0	4.0	2.0		
	2000	TYKW	5	S	0131.8	0132.2	1.0	1.5	.5		
	2000	TYKW	5	S	0151.3	0151.7	1.0	2.0	.7		
	3750	TYKW	45	C	0218.0	0221.0	5.0	3.0	1.0		
	3750	TYKW	45	C	0242.0	0249.0	11.0	14.0	5.0		
	2000	TYKW	21	GRF	0243.0	0257.0	100.0	2.0	1.0		
	2930	VORO	3	S	0247.0	0248.0	4.0	2.0			
	2000	TYKW	45	C	0247.0	0249.0	8.0	20.0	6.0		
	9400	TYKW	21	GRF	0248.0	0259.0	100.0	6.0	3.0		
	3750	TYKW	30	PBI	0253.0		95.0	6.0	3.0U		
	2000	TYKW	28	PRE	0322.5	0322.9	5.5	3.0	1.0		
	3750	TYKW	21	GRF	0325.0U	0332.0U	40.0U	10.0U	4.0U		
	2930	VORO	45	C	0328.0	0332.0	6.0	2.0			
	2000	TYKW	45	C	0328.0	0332.8	7.0	13.0	6.0		
	9400	TYKW	21	GRF	0329.0	0333.0	45.0	4.0	2.0		
	2000	TYKW	29	PBI	0335.0		25.0	4.0	2.0		
	3750	TYKW	5	S	0355.0	0356.4	4.0	5.0	2.0		
	9400	TYKW	5	S	0355.5	0356.0	2.5	4.0	1.5		
	3750	TYKW	5	S	0416.5	0417.3	2.5	15.0	3.5		
	2000	TYKW	5	S	0416.8	0417.4	2.5	8.0	2.5		
	9400	TYKW	45	C	0417.0	0417.4	8.0	12.0	4.0		
	3750	TYKW	5	S	0419.0	0421.0	4.0	2.0	1.0		
	2000	TYKW	21	GRF	0437.0	0444.0	100.0	6.0	3.0		
	3750	TYKW	45	C	0438.0	0444.7	32.0	12.0	4.0		
	3750	TYKW	21	GRF	0438.0	0520.0	105.0	11.0	6.0		
	9400	TYKW	21	GRF	0443.0	0520.0	90.0	6.0	3.0		
	1000	TYKW	45	C	0506.0	0516.0	14.0	8.0	3.0		
	1000	TYKW	45	C	0521.5	0522.0	2.5	3.0	1.0		
	1000	TYKW	45	C	0528.0	0606.4	74.0	70.0	9.0		
	3750	TYKW	5	S	0532.0	0532.4	1.5	2.0	.5		
	2000	TYKW	5	S	0543.0	0545.0	15.0	2.0	1.0		
	3750	TYKW	5	S	0543.0	0548.8	15.0	4.0	1.5		
	650	GORK	23	GRF	0551.0E	0806.6	339.0D	27.0			
	950	GORK	23	GRF	0600.0E	0804.3	330.0D	26.0			
	3750	TYKW	45	C	0603.0E	0606.2	7.0D	69.0	10.0D		
	6100	KISV	4	S/F	0605.3	0606.0	5.0	100.0			
	15000	KISV	4	S/F	0605.3	0606.3	3.0	70.0			
	9100	GORK	3	S	0605.6	0606.3	1.0	95.0			
	950	GORK	46	C	0605.8	0606.5	8.0	44.0			
	950	GORK			0605.8	0611.0		21.0			
	1415	MANI	3	S	0606.2	0607.2	3.1	41.9	13.9		
	606	MANI	3	S	0606.2	0607.2	3.3	29.2	9.7		
	4995	MANI	3	S	0606.4	0607.1	1.6	66.0	22.0		
	2695	MANI	3	S	0606.4	0607.2	4.1	63.2	21.1		
	8800	MANI	3	S	0606.4	0607.2	1.6	111.6	37.2		
	9100	GORK	29	PBI	0606.7	0606.7	8.8	22.0			

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
30	9400	TYKW	5	S	0607.0E	0607.0U	3.0D	11.0D	3.0D		
	2950	GORK	21	GRF	0609.0E	0757.0	260.0D	39.0			
	9100	GORK	21	GRF	0639.8	0945.8	320.0D	25.0			
	1000	TYKW	45	C	0648.0	0657.2	35.0	65.0	25.0		
	650	GORK	45	C	0648.0	0700.6	30.0	43.0			
	650	GORK			0648.0	0714.4		41.0			
	950	GORK	46	C	0649.1	0657.3	25.8	48.0			
	950	GORK			0649.1	0703.6		38.0			
	950	GORK			0649.1	0706.7		22.0			
	3750	TYKW	20	GRF	0700.0	0717.0U	30.0D	8.0	4.0D		
	9400	TYKW	20	GRF	0700.0	0726.0	40.0D	16.0	9.0D		
	6100	KISV	21	GRF	0707.0	0716.4	32.0	4.0			
	15000	KISV	21	GRF	0707.0	0730.0	33.0	16.0			
	810	KRAK	45	C	0800.0E	0806.1	14.0D	36.0	12.0D		
	430	KRAK			0800.0E	0916.2		220.0			
	950	GORK	4	S/F	0804.4	0805.8	5.5	22.0			
	6100	KISV	3	S	0805.7	0806.0	3.0	8.0			
	930	BORD	40	F	0810.0E	0945.4	137.0D	56.0	10.0		
	810	KRAK	40	F	0844.8	0851.2	10.4	36.0	4.0		
	3000	POTS	3	S	0945.0	0945.5	3.0	30.0			
	6100	KISV	4	S/F	0945.0	0945.5	1.2	13.0			
	2650	DWIN	1	S	0945.0	0946.0	1.0	25.0	10.0		
	204	IZMI	5	S	0945.1	0946.0	1.5	40.0	25.0		
	2950	GORK	3	S	0945.3	0945.8	2.6	21.0	10.0		
	1470	POTS	3	S	0945.4	0945.8	1.1	7.0			
	808	ONDR	8	S	0945.5	0945.7	.3	14.0			
	6100	KISV	1	S	1036.5	1037.2	1.0	4.0			
	15000	KISV	1	S	1036.7	1037.3	14.0	14.0			
	9100	GORK	1	S	1037.0	1037.5	1.8	12.0	6.0		
	430	KRAK			1114.2	1221.0		320.0			
	8400	BERN	21	GRF	1130.0	1214.7	90.0	150.0			
	3200	BERN	45	C	1130.0	1214.9	90.0	290.0			
	5200	BERN	45	C	1130.0	1214.9	90.0	350.0			
	1470	POTS	45	C	1130.0	1215.5	115.0	123.0			
	6100	KISV			1130.7	1210.6		34.0			
	6100	KISV	45	C	1130.7	1215.0		178.0			
	930	BORD	41	F	1131.6	1133.6	4.4	47.0	3.0		
	810	KRAK	8	S	1133.4	1133.4	.2	27.0			
	808	ONDR	8	S	1133.5	1133.6	.4	11.0			
	2650	DWIN		GRF	1140.0		80.0	30.0			
	9400	HUAN	21	GRF	1141.8E	1229.0	161.5D	52.9	16.3		R
	3000	POTS	21	GRF	1145.0	1221.5	105.0	46.0			
	9500	POTS	21	GRF	1145.0	1222.0	100.0	41.0			
	810	KRAK	45	C	1152.7	1214.5	35.0	100.0	17.0		
	808	ONDR	47	GB	1200.0	1215.0	30.0	68.0	8.0		
	930	BORD	46	C	1204.0	1214.7	25.0	112.0	15.0		
	2650	DWIN	45	C	1207.0	1215.0	20.0	200.0	100.0		
	15000	KISV			1208.0	1210.6		13.0			
	15000	KISV	45	C	1208.0	1215.2		97.0			
	3000	POTS	4	S/F	1209.0	1215.3	10.0	250.0			
	9400	HUAN	3	S	1210.0	1214.9	8.4	130.2	44.5		R
	9500	POTS	3	S	1214.5	1215.0	4.5	150.0			
	33	UPIC	45	C	1221.0	1221.6	1.7				
	29	UPIC	45	C	1221.7	1222.1	.8				
	930	BORD	45	C	1306.0	1306.8	2.0	27.0	2.0		
	2800	OTTA	8	S	1642.0	1642.2	.3	3.0	1.5		
	2800	OTTA	240	R	1700.0	1717.0	17.0	8.6			
	9400	HUAN	22	GRF	1701.1	1832.0	165.3	18.5	9.2		0
	2800	OTTA	1	S	1755.0	1757.0	10.0	2.6	1.3		
	2800	OTTA	21	GRF	1820.0	1838.0	80.0	13.2	6.4		
	2800	OTTA	4	S/F	1824.0	1831.0	12.0	34.0	17.0		
	9400	HUAN	20	GRF	2002.2	2012.5	36.8	8.4	2.0		0
	2695	PENT	1	S	2011.0	2012.0	6.0	4.4	2.2		
	2695	PENT			2124.0	2157.0	34.0D	960.0			
	500	HIRA	24	R	2145.0E	0242.0	555.0D	110.0	40.0		SR
	3750	TYKW	28	PRE	2315.0	2330.2	17.0	18.0	5.0		
	2000	TYKW	28	PRE	2323.0	2329.0	10.0	11.0	4.0		
	9400	TYKW	28	PRE	2325.0	2336.1	12.0	21.0	9.0		
	3750	TYKW			2332.0	0010.1		450.0			
	3750	TYKW	47	GB	2332.0	2351.7	53.0	1110.0	280.0		

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
30	4995	MANI	47	GB	2332.5	2351.7	46.5	1565.1	521.7		
	2000	TYKW	47	GB	2333.0	0008.2	57.0	1510.0	270.0		
	2000	TYKW			2333.0	2352.1		600.0			
	2695	MANI	47	GB	2333.5	0007.9	50.5	1332.0	444.0		
	1000	TYKW	28	PRE	2334.0	2334.3	2.0	7.0	2.5		
	8800	MANI	47	GB	2334.0	2351.7	44.0	1602.1	534.0		
	1415	MANI	47	GB	2334.3	0008.8	53.7	1002.5	334.2		
	606	MANI	47	GB	2335.0	0009.0	52.0	764.4	254.8		
	500	HIRA	48	C	2336.0	0006.5	53.0	500.0	150.0		MR
	1000	TYKW	47	GB	2336.0	0007.9	54.0	3290.0	290.0		
	1000	TYKW			2336.0	2357.1		2080.0			
	200	HIRA	48	C	2336.6	2339.0	67.0	2000.0	180.0		MR
	200	HIRA			2336.6	2344.0		1000.0			MR
	9400	TYKW			2337.0	0007.9		300.0			
	9400	TYKW	47	GB	2337.0	2351.4	48.0	1670.0	260.0		
	100	HIRA			2337.8	0017.0		5000.0			MR
	100	HIRA	48	C	2337.8	2339.3	56.0	10000.0D	685.0D		
	35000	NAGO	28	PRE	2339.0	2350.0	11.0	22.0			
	35000	NAGO	5	S	2351.0	2351.0	5.0	147.0			
	35000	NAGO	29	PBI	2357.0	0007.0	53.0	46.0			
31	208	VORO	44	NS	0000.0E		240.0D		150.0D		
	200	GORK	44	NS	0557.0E		333.0D		85.0		
	100	GORK	44	NS	0600.0E		330.0D		20.0		
	221	ABST	44	NS	0600.0E	0812.2	180.0D	20.0			
	204	IZMI	44	NS	0700.0E		300.0D	50.0			
	127	TORN	44	NS	0710.0E		470.0D		326.0		V1,DISTURBED
	260	ONDR	44	NS	0755.0E	1032.0U	405.0D	23.0U			
	430	KRAK	44	NS	1030.0E	1129.4	215.0D	230.0			
	430	KRAK	43	NS	1335.0	1359.0	52.0D	260.0	150.0		
	536	ONDR	43	NS	1337.0		63.0D				
	200	HIRA	44	NS	2138.0E	0549.0	620.0D	290.0	50.0		MR
	100	HIRA	44	NS	2138.0E	0624.0	620.0D	1300.0	290.0		SR
	3750	TYKW	30	PBI	0025.0		255.0	90.0	30.0		
	9400	TYKW	30	PBI	0025.0		240.0	95.0	23.0		
	2000	TYKW	29	PBI	0030.0		210.0	53.0	15.0		
	1000	TYKW	30	PBI	0030.0		210.0	29.0	12.0		
	3750	TYKW	20	GRF	0150.0	0212.0	35.0	4.5	1.5		
	1000	TYKW	45	C	0208.0	0216.6	10.0	15.0	4.0		
	9400	TYKW	21	GRF	0320.0	0335.0	50.0	4.0	2.0		
	3750	TYKW	5	S	0350.0	0350.8	3.0	12.0	3.0		
	9400	TYKW	5	S	0350.0	0350.8	3.0	9.0	3.0		
	200	HIRA	46	C	0407.7	0408.6	2.3	840.0	280.0		MR
	3750	TYKW	21	GRF	0448.0	0530.0	130.0	14.0	7.0		
	2000	TYKW	21	GRF	0500.0	0600.0	140.0	4.0	2.0		
	9400	TYKW	20	GRF	0517.0	0534.0	55.0	7.0	3.0		
	650	GORK	22	GRF	0551.0	1047.7	339.0D	20.0			
	2950	GORK	20	GRF	0617.0	0730.0	313.0D	22.0			
	6100	KISV	21	GRF	0621.0	0637.7	31.0	8.0			
	9400	TYKW	20	GRF	0625.0	0635.0	30.0	10.0	4.0		
	3750	TYKW	45	C	0626.0	0643.8	20.0	6.0	2.0		
	9100	GORK	21	GRF	0626.6	1048.1	304.0D	19.0			
	1000	TYKW	45	C	0633.5	0635.0	2.0	34.0	3.0		
	2000	TYKW	45	C	0634.0	0635.0	1.5	6.0	1.5		
	3750	TYKW	5	S	0650.0	0651.0	1.0	3.0	1.0		
	9100	GORK	1	S	0706.0	0706.4	1.3	30.0	15.0		
	9400	TYKW	5	S	0706.0	0706.4	1.5	27.0	6.0		
	3750	TYKW	5	S	0706.0	0706.4	1.5	12.0	3.0		
	6100	KISV	1	S	0706.1	0706.4	1.5	14.0			
	15000	KISV	1	S	0706.2	0706.4	.7	18.0			
	6100	KISV	1	S	0902.1	0902.5	.7	4.0			
	33	UPIC	2	S/F	1027.6	1027.6	.8				
	29	UPIC	4	S/F	1027.6	1027.9	.9				
	808	ONDR	8	S	1035.0	1035.0	.2	18.0			
	808	ONDR	8	S	1038.2	1038.2	.1	15.0			
	808	ONDR	8	S	1106.7	1106.7	.2	11.0			
	810	KRAK	8	S	1124.3	1124.4	.3	15.0			
	33	UPIC	4	S/F	1149.0	1149.0	.3				
	29	UPIC	4	S/F	1149.0	1149.1	.4				
	9500	POTS	45	C	1315.5	1331.0	60.0	1075.0			

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31	930	BORD	45	C	1316.0	1321.1	46.0	431.0	18.0		
	11800	BERN	47	GB	1316.0	1330.9	70.0	1680.0			
	3200	BERN	45	C	1316.0	1331.0	70.0	461.0			
	5200	BERN	47	GB	1316.0	1331.0	70.0	920.0			
	8400	BERN	47	GB	1316.0	1331.0U	70.0	1200.0D			
	1470	POTS	45	C	1318.0	1331.5	45.0	185.0			
	536	ONDR	47	GB	1319.0	1325.0	280.0U	18.0	84.0		
	808	ONDR	47	GB	1320.0	1331.0U	40.0				
	2800	OTTA	4	S/F	1320.0	1331.0	15.0	352.0	84.6		
	810	KRAK	49	GB	1321.0	1322.3	14.2	890.0	44.0		
	2650	DWIN	45	C	1321.0	1331.0	15.0	340.0	150.0		
	3000	POTS	45	C	1321.0	1331.1	29.0	1025.0			
	234	POTS	45	C	1321.0	1419.0	79.0D	500.0			
	430	KRAK	49	GB	1322.0	1322.6	13.5	740.0D	160.0		
	127	TORN	27	RF	1322.0	1328.0	80.0	2600.0	530.0		
	430	KRAK			1322.0	1332.0		740.0D			
	33	UPIC	45	C	1322.2	1322.2	1.5				
	113	POTS	4	S/F	1322.2	1322.4	.8	3500.0	100.0		III
	234	POTS	4	S/F	1322.3	1322.5	.7	770.0	30.0		III
	29	UPIC	45	C	1322.5	1322.6	1.1				
	19600	BERN	47	GB	1324.0	1330.9	26.0	838.0			
	113	POTS	45	C	1327.0	1422.5	83.0D	2100.0			
	35000	BERN	47	GB	1330.0U	1331.0U	10.0U	585.0U			
	810	KRAK	30	PBI	1333.9	1346.6	38.0	56.0	20.0		
	2800	OTTA	29	PBI	1335.0	1335.0	195.0	21.0	10.5		
	33	UPIC	45	C	1337.6	1338.1	.8				
	29	UPIC	45	C	1338.0	1338.6	.9				
	2800	OTTA	1	S	1746.0	1747.8	3.0	5.2	2.6		
	2800	OTTA	21	GRF	1800.0	1840.0	70.0	7.8	3.9		
	2800	OTTA	3	S	1834.0	1836.1	6.0	46.0	14.0		
	2695	PENT	21	GRF	2140.0	2225.0	90.0D	31.0			
	2695	PENT	46F	C	2203.0	2206.3	14.0	66.0	29.0		
	9400	TYKW	20	GRF	2220.0E	2225.0U	40.0D	20.0	10.0D		
	3750	TYKW	20	GRF	2220.0E	2230.0U	40.0D	10.0	5.0D		
	500	HIRA	42	SER	2313.0	2328.6	35.0	10.0	6.0		WL
	2000	TYKW	5	S	2317.0	2320.4	5.0	12.0	4.0		
	3750	TYKW	45	C	2317.0	2344.0	37.0	19.0	8.0		
	200	HIRA	46	C	2317.3	2319.0	4.0	140.0	38.0		0
	9400	TYKW	5	S	2318.0	2320.2	5.0	5.0	2.0		
	1000	TYKW	45	C	2319.0	2321.1	4.0	11.0	4.0		
	2000	TYKW	30	PBI	2322.0		60.0	4.0	2.0		
	9400	TYKW	20	GRF	2332.0	2344.0	55.0	10.0	5.0		
	2000	TYKW	45	C	2339.0	2344.0	9.0	8.0	4.0		
	1000	TYKW	45	C	2343.0	2344.0	5.0	5.0	2.0		
	3750	TYKW	29	PBI	2354.0		30.0	7.0	4.0		

Reports are received routinely from the following observatories:

ATHN = Athens
BERN = Berne
BORD = Bordeaux
CRIM = Crimea
DWIN = Dwingeloo
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
IZMI = IZMIRAN
KISV = Kislovodsk
KRAK = Krakow
LEAR = Learmonth
MANI = Manila
NAGO = Nagoya
NOBE = Nobeyama
ONDR = Ondrejov
OTTA = Ottawa
PALE = Palehua
PEKG = Peking
POTS = Potsdam
SOAP = Sao Paulo
SGMR = Sagmore Hill
SYDN = Sydney
TORN = Torun
TYKW = Toyokawa
YUNN = Yunnan
TRST = Triste
UPIC = Upice
VORO = Voroshilov

Explanation of Type Code:

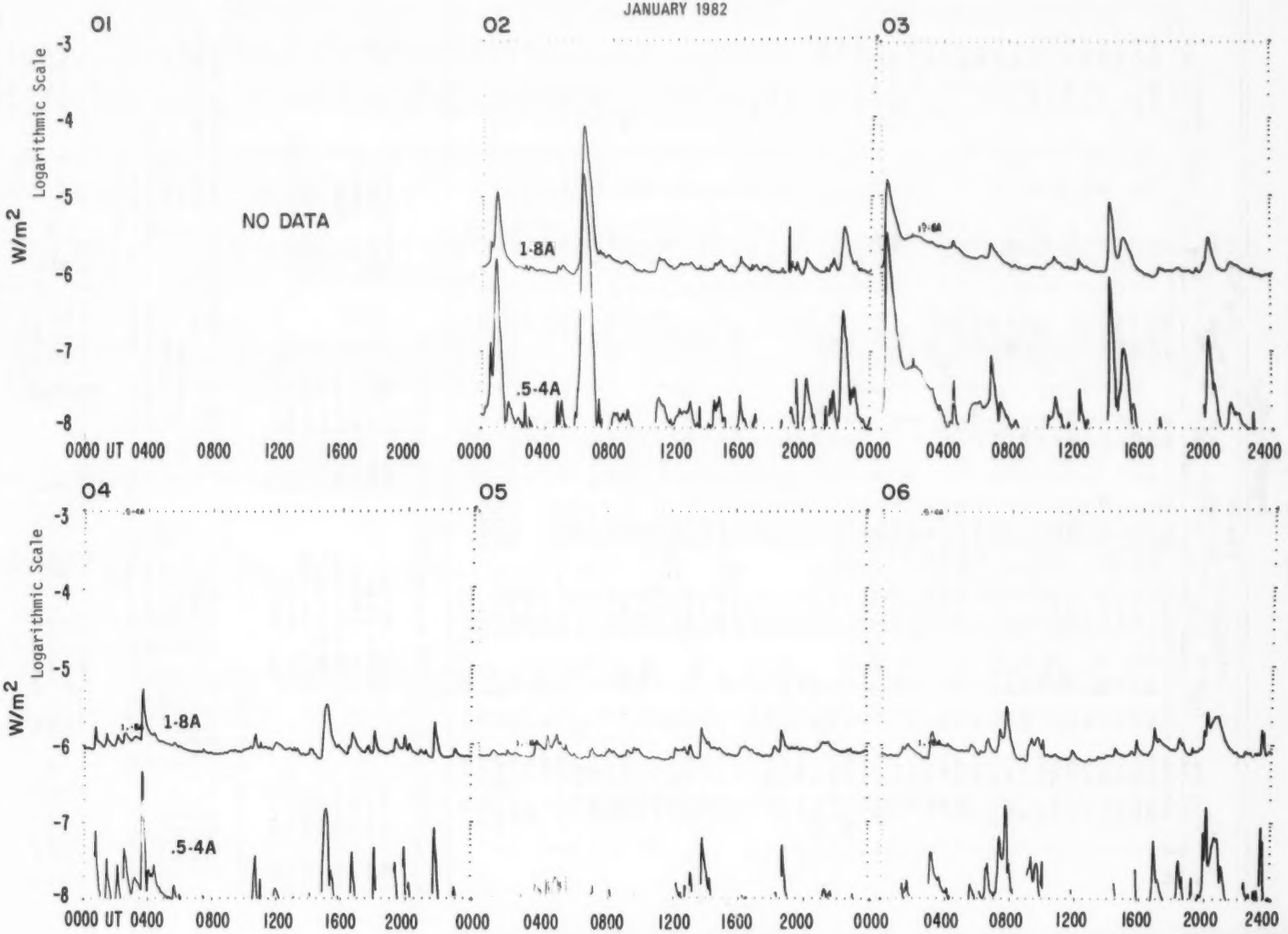
1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
33 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset of Noise Storm
44 Noise Storm in Progress
45 Complex
46 Complex F
47 Great Burst
48 Major
49 Major +

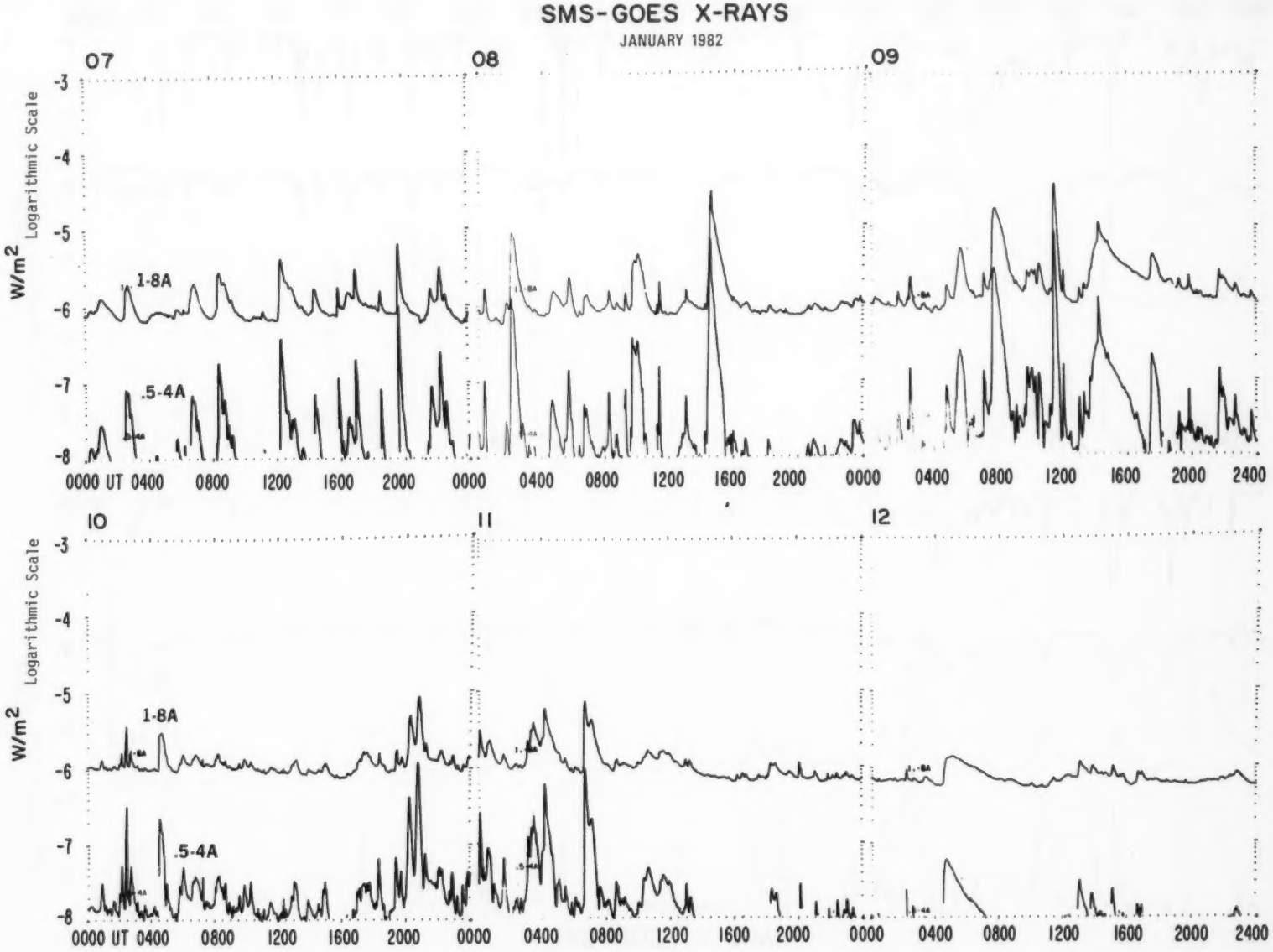
1A Simple 1A
3A Simple 2A
21A Simple 3A GRF
2A Simple 1AF
4A Simple 2AF
240 Rise only
240F Rise only F
24P Post Rise
24PF Post Rise F
16A Fall A
260 Fall Only
26F Fall F
27F Rise and Fall F
27AF Rise and Fall AF
31A Post Burst Decrease A
32A Absorption A
46F Complex F

Under the "Remarks" column heading, RIF stands for Relative Increase in Flux. The expression "RIF 469.2", for example, denotes a flux increase of 469.2% above background.

SMS-GOES X-RAYS

JANUARY 1982




SMS-GOES X-RAYS
JANUARY 1982
07
08
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12
W/m2 Logarithmic Scale
-3
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-7
-8
1-8A
.5-4A
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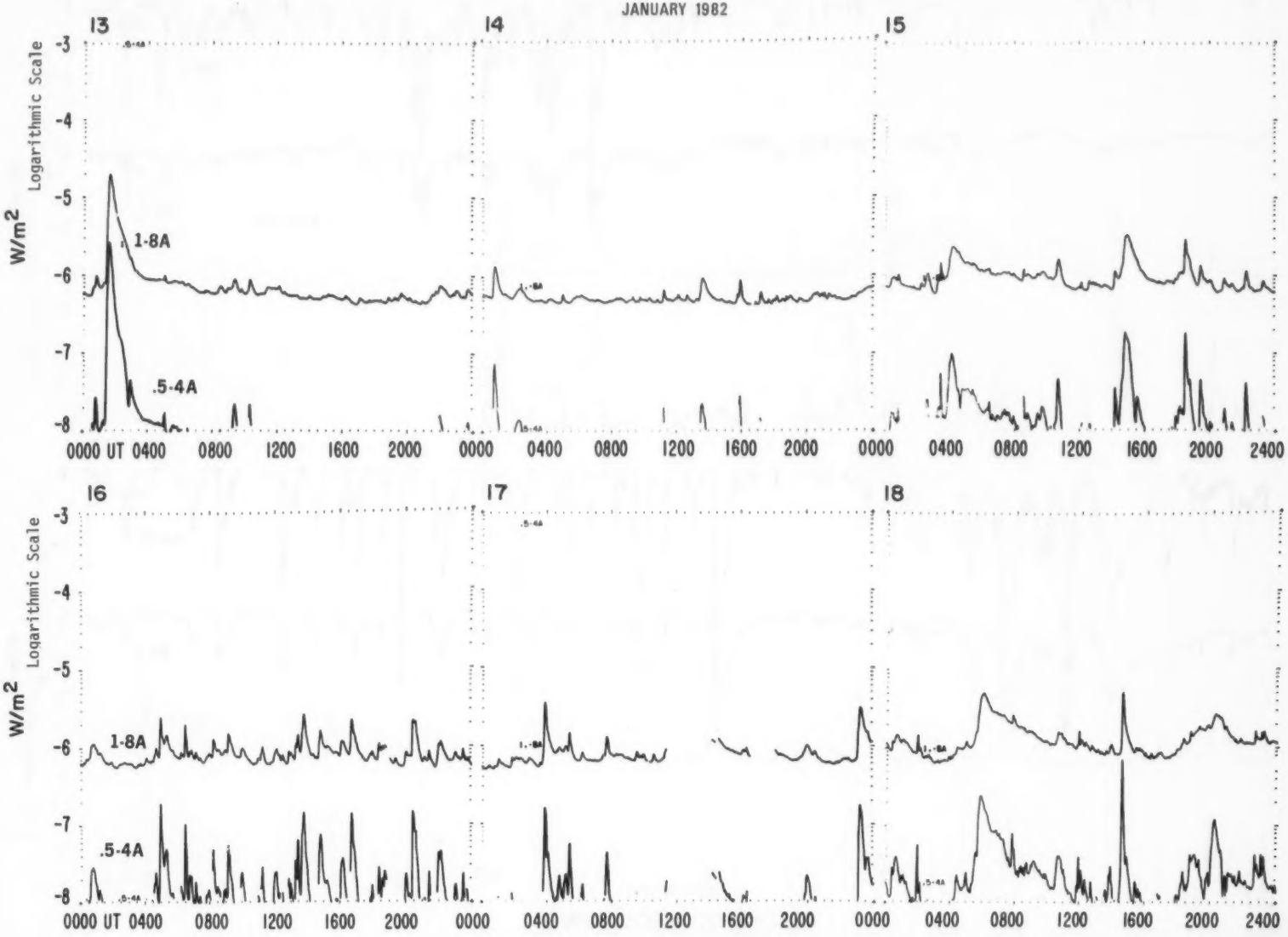
SMS-GOES X-RAYS

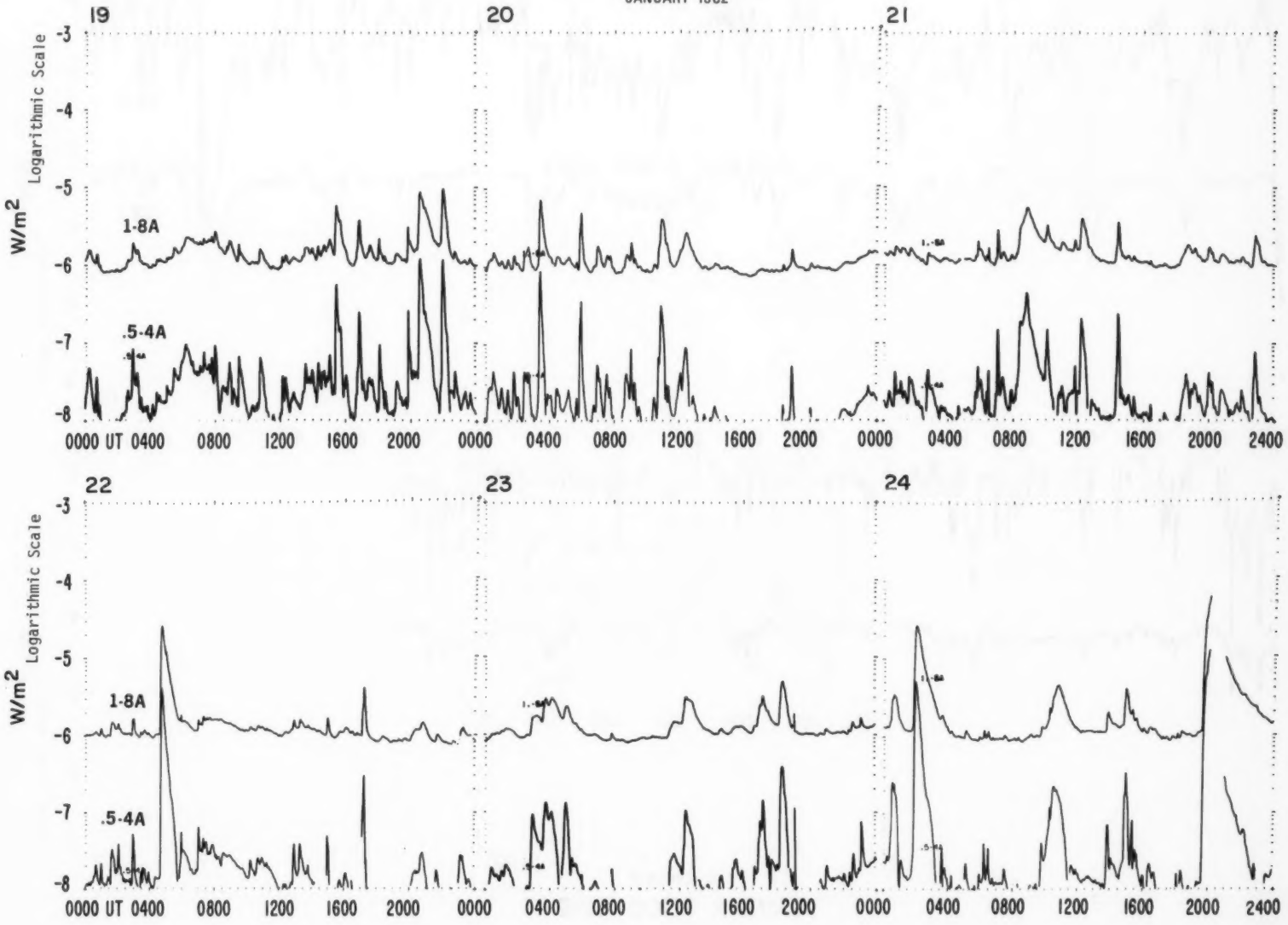
JANUARY 1982



SMS-GOES X-RAYS

SMS-GOES X-RAYS

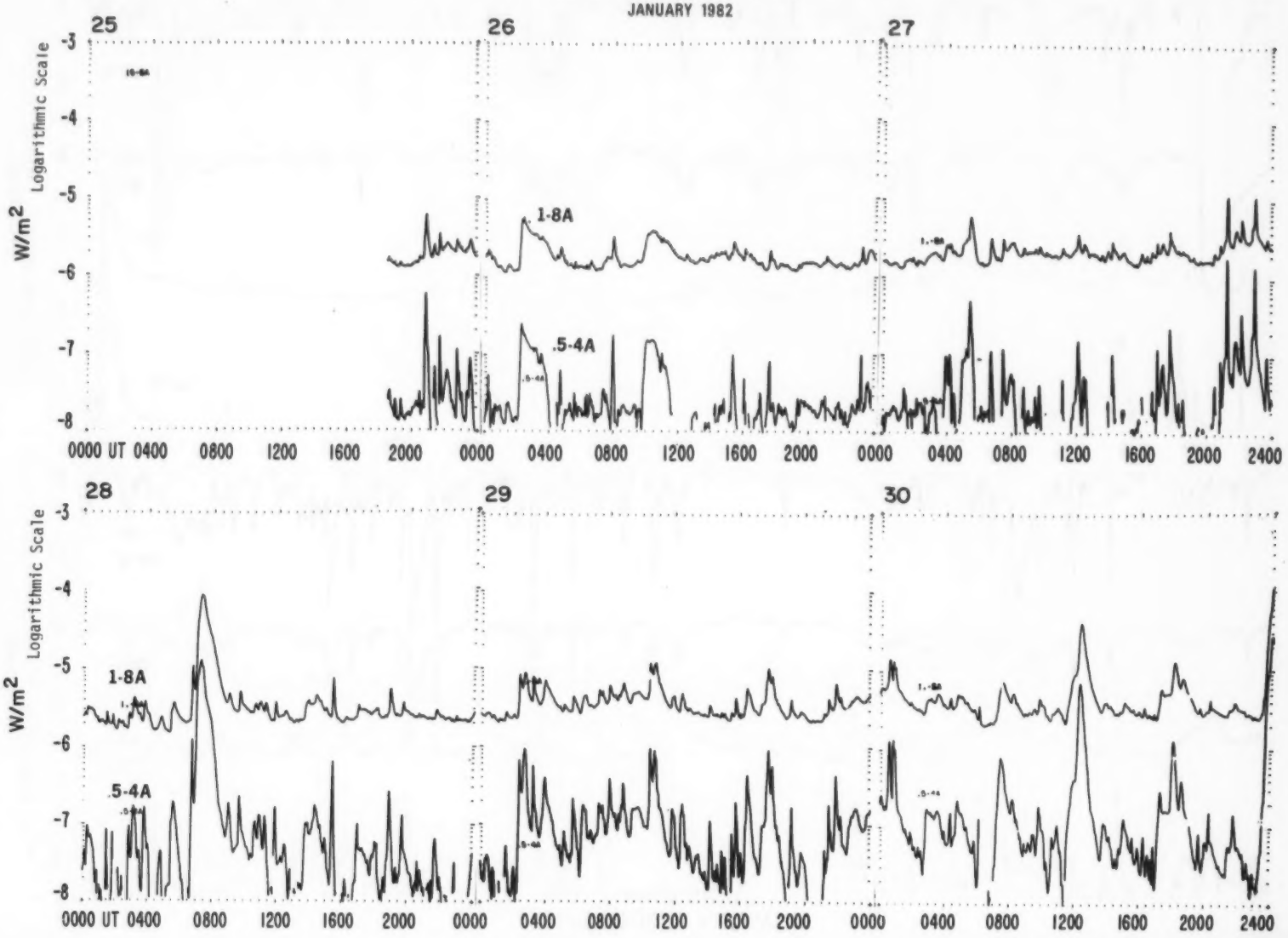
JANUARY 1982



29 Jan 82

SMS-GOES X-RAYS

JANUARY 1982



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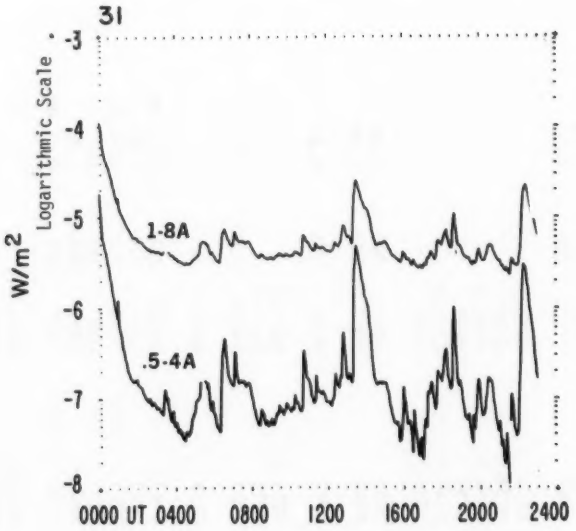
JANUARY 1982



MASS EJECTIONS FROM THE SUN

January 1982

Sta	Day	Observed UT Start	Max	End	Location RA°	R/R_o	Freq or Wavelength	Kind of Event
CULG	Jan 01	0058		0115.5			Decimeter; meter	II
LEAR	Jan 01	0058.4		0120.1			Meter	II
PALE	Jan 01	0059.8		0103.7			Meter	II
CULG	Jan 02	0613.4		0651			Meter	II
LEAR	Jan 02	0621.0		0639.6			Meter	II
LEAR	Jan 03	0011.0		0052.7			Meter	IV
PALE	Jan 03	0011.4		0039.0			Meter	IV
CULG	Jan 03	0020		0052			Meter	II
CULG	Jan 03	0649.5		0654			Meter	II
HARV	Jan 03	2007		2011			Meter	II
HARV	Jan 04	1457		1507			Meter	II
KHAR	Jan 10	0939		1015	279	1.00	H-alpha	S
KHAR	Jan 10	0940	1025	1038	281	0.99	H-alpha	S
KHAR	Jan 10	1002		1026	283	1.00	H-alpha	S
KHAR	Jan 10	1041		1110	286	0.96	H-alpha	S
CULG	Jan 13	0133		0155			Decimeter	IV
CULG	Jan 13	0135.5		0150			Meter	II
LEAR	Jan 13	0136.5		0149.8			Meter	II
CULG	Jan 13	0137		0155			Meter	IV
LEAR	Jan 13	0149.8		0322.0			Meter	IV
CULG	Jan 13	0200		0305			Meter	IV
KHAR	Jan 14	0904		1010	297	1.00	H-alpha	S
KHAR	Jan 14	0904		1010	287	1.00	H-alpha	S
KHAR	Jan 17	0928		0945	158	0.21	H-alpha	S
LEAR	Jan 19	0211.8		0219.8			Meter	II
CULG	Jan 19	0212		0219.5			Meter	II Weak
WEND	Jan 19	1323		1401D	1.00	114	H-alpha	A
CULG	Jan 20	0726		0730			Meter	II
WEND	Jan 21	0847E		0924D	261	0.99-1.05	H-alpha	S
KHAR	Jan 21	0937		1035	259	1.00	H-alpha	S
WEND	Jan 21	0957	1010	1030	261	0.99-1.04	H-alpha	S
WEND	Jan 21	1035	1041	1050	261	1.00	H-alpha	S
KHAR	Jan 21	1041		1056	259	1.00	H-alpha	S
WEND	Jan 21	1312	1321	1333	261	1.00-1.06	H-alpha	S
CULG	Jan 22	0447.5		0505.5			Meter	II
LEAR	Jan 22	0451.5		0507.5			Meter	II
CULG	Jan 22	0502.5		0530			Meter	IV Weak
ABST	Jan 28	0640	0640	0659	083	0.79	H-alpha	S
CULG	Jan 28	0703		0934			Meter	II
CULG	Jan 28	0704.5		0707.5U			Decimeter	IV
ABST	Jan 30	0613	0614	0620	104	0.67	H-alpha	S
WEIS	Jan 30	1137.4		1157.5			30-140 MHz	II Harmonic
HARV	Jan 30	2338		2350			Decimeter; meter	IV
WEIS	Jan 31	1328		1340			30-200 MHz	II Harmonic

SGD 455 Part II (Comprehensive)

MISCELLANEOUS DATA

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Active Regions 8 November 1981 - 2 January 1982	34-35
Synoptic Solar Maps 8 November 1981 - 2 January 1982	36-37

ACTIVE REGIONS
CARRINGTON ROTATION 1715
(November 8 to December 5, 1981)

Region No.	Coordinates Lat.	Coordinates Long.	IMP	Age at CMP	Spot-less Region	Region No. in Rotation 1714	Activity at West Limb
1	18°S	347	1	>6	x		dispersed
2	19°N	343	1	>6	x		dispersed
3	17°S	333	2	-2			disappeared
4	18°S	328	5	>6		2-4	decreasing
5	18°N	327	4	+2			decreasing
6	03°N	325	3	+4			decreasing
7	15°N	325	2	-2			dispersed
8	17°N	323	3	>6			decreasing
9	20°S	318	2	>6			decreasing
10	22°N	316	2	+6			decreasing
11	17°N	312	2	>6			decreasing
12	12°N	306	2	>6			decreasing
13	16°S	305	3	-3			increasing
14	12°N	297	2	>6			decreasing
15	10°S	290	1	>6	x	12	decreasing
16	04°S	286	1	>6	x		dispersed
17	12°N	282	2	>6	x	13	dispersed
18	18°S	280	1	>6	x		decreasing
19	18°N	279	3	>6			decreasing
20	02°S	275	1	>6	x	16	decreasing
21	12°S	269	1	>6	x	18	decreasing
22	11°N	266	1	>6	x	19	dispersed
23	18°S	261	5	-1			stable
24	08°S	255	1	>6	x		dispersed
25	03°N	246	1	-1	x		disappeared
26	06°S	223	3	>6			decreasing
27	18°S	217	2	+5			decreasing
28	13°N	202	3	+2			decreasing
29	18°S	189	1	+6	x		dispersed
30	10°N	187	1	+4	x		disappeared
31	19°N	169	1	>6	x		dispersed
32	32°S	167	1	>6	x		dispersed
33	12°S	155	1	>6	x		decreasing
34	13°N	146	1	>6	x		disappeared
35	10°N	131	1	>6	x		dispersed
36	16°N	117	1	>6	x		dispersed
37	13°N	111	5	>6			decreasing
38	01°S	107	1	>6	x		dispersed
39	05°N	106	1	-1	x		stable
40	20°S	105	2	0			decreasing
41	17°S	94	1	-4	x		?
42	09°N	89	1	>6	x		dispersed
43	17°N	78	3	0			decreasing
44	15°N	75	2	-1			decreasing
45	13°S	70	1	>6	x		decreasing
46	29°N	67	1	>6	x		dispersed
47	09°S	63	5	>6			decreasing
48	15°S	55	3	>6			decreasing
49	11°S	52	1	>6	x	52	decreasing
50	14°S	38	2	>6			decreasing
51	07°N	28	1	>6	x		disappeared
52	03°S	10	2	>6		58	decreasing
53	19°S	9	2	+4			decreasing
54	16°S	8	1	>6	x		decreasing
55	20°N	0	3	>6			decreasing

ACTIVE REGIONS
CARRINGTON ROTATION 1716
(December 5, 1981 to January 2, 1982)

Region No.	Coordinates Lat.	Coordinates Long.	IMP	Age at CMP	Spot-less Region	Region No. in Rotation 1715	Activity at West Limb
1	07°N	349	5	>6			decreasing
2	21°N	345	1	+4	x		decreasing
3	04°N	333	2	>6			decreasing
4	21°S	328	3	>6			decreasing
5	09°N	324	5	+5			decreasing
6	19°N	323	5	>6		5-8	decreasing
7	33°S	323	2	-1			decreasing
8	22°S	321	1	+5	x		dispersed
9	18°S	318	3	>6			decreasing
10	20°S	318	1	>6	x		dispersed
11	14°N	306	3	>6			decreasing
12	16°S	305	3	>6			decreasing
13	08°N	302	3	>6			decreasing
14	08°S	289	4	+2			decreasing
15	10°N	287	3	>6			decreasing
16	18°N	281	3	>6		19	decreasing
17	09°N	278	1	+4	x		dispersed
18	16°S	275	1	>6	x	21	dispersed
19	14°S	262	2	>6			decreasing
20	19°S	262	2	>6			decreasing
21	07°S	259	3	>6			decreasing
22	02°S	241	1	>6	x		dispersed
23	09°S	239	2	>6			decreasing
24	09°N	235	1	>6	x		decreasing
25	07°N	221	1	-1	x		dispersed
26	14°N	210	1	>6	x		decreasing
27	12°N	202	2	>6		28	decreasing
28	12°S	201	1	-1	x		decreasing
29	10°S	185	3	+2			decreasing
30	25°N	166	1	>6	x		dispersed
31	15°N	157	1	>6	x		dispersed
32	13°S	156	1	>6	x		dispersed
33	24°S	155	1	>6	x		dispersed
34	10°N	120	1	>6	x	37	dispersed
35	13°N	108	3	>6			decreasing
36	23°S	106	1	>6	x	40	decreasing
37	22°S	94	1	>6	x		dispersed
38	14°N	83	1	>6	x		dispersed
39	19°S	81	2	-2			decreasing
40	22°N	81	3	>6			decreasing
41	26°S	76	3	>6			decreasing
42	12°S	75	1	>6	x	47	decreasing
43	19°S	67	1	>6	x	48	decreasing
44	15°N	66	1	>6	x		dispersed
45	13°S	57	1	>6	x	49	decreasing
46	16°N	52	1	>6	x		dispersed
47	15°N	44	1	>6	x		disappeared
48	13°S	38	1	>6	x	50	decreasing
49	18°N	34	3	+3			decreasing
50	11°S	26	1	>6	x		decreasing
51	21°S	13	1	>6	x		dispersed
52	05°N	0	1	>6	x	R 1716 1	

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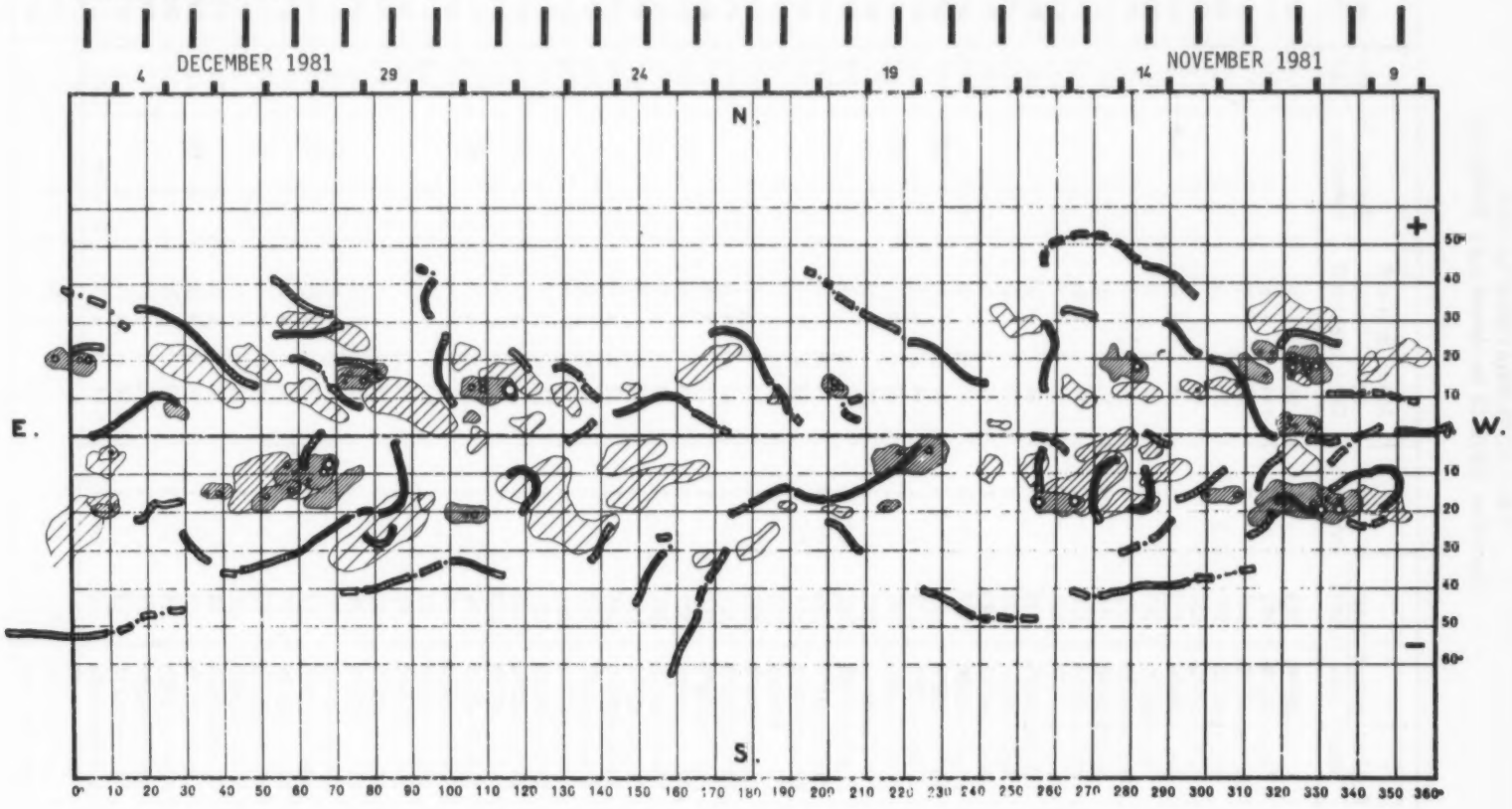
Misc
Nov-Dec 81

SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1715
NOVEMBER 8 - DECEMBER 5, 1981

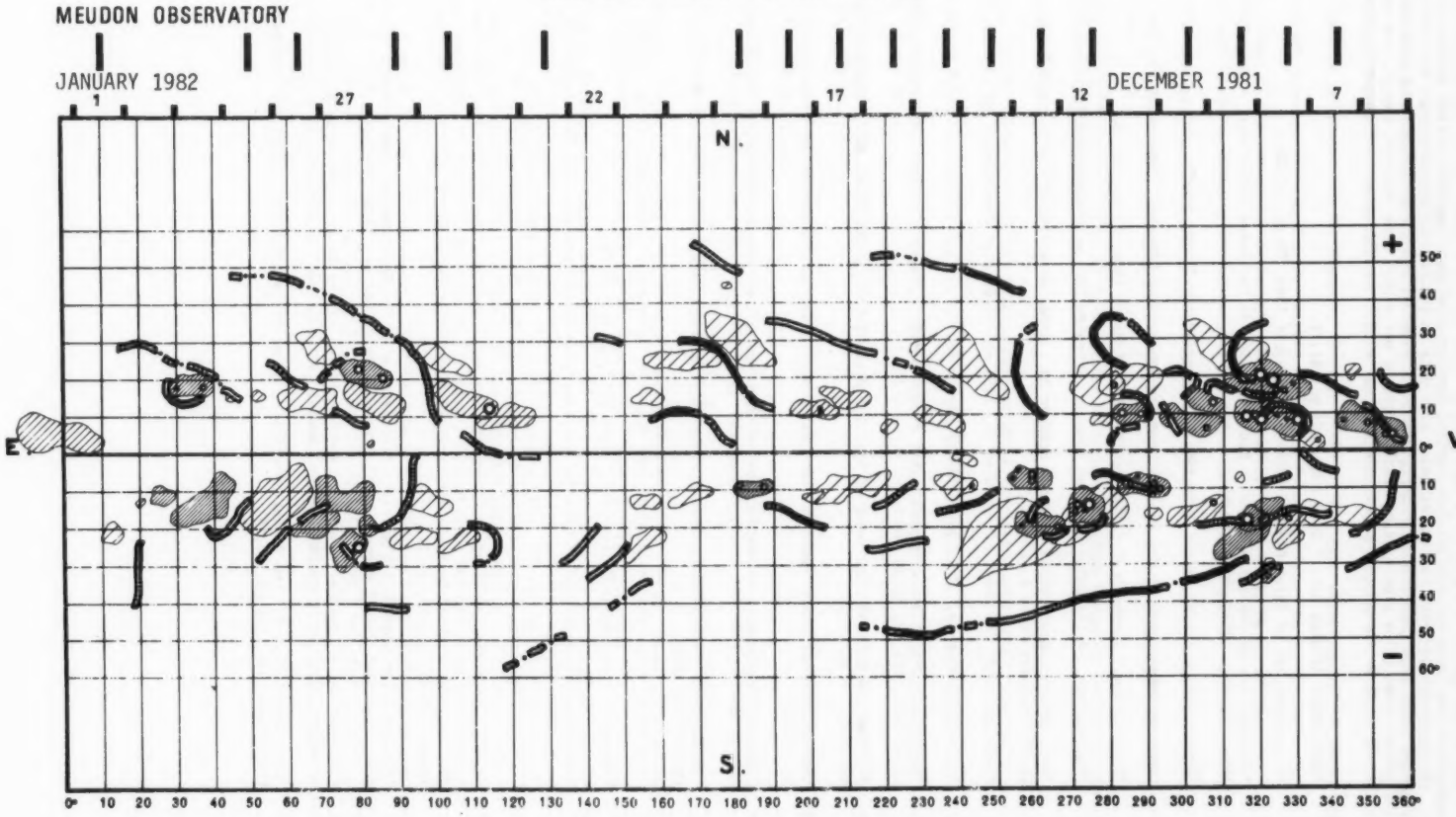
MEUDON OBSERVATORY



SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1716

DECEMBER 5, 1981 - JANUARY 2, 1982



37
Misc
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